

STRAPS OF KINOW LEDGE



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A SEAT OF INDUSTRY.





SCRAPS OF KNOWLEDGE.

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JANET BYRNE,

Author of " Picture Teaching."

Mith Mumerous Fllustrations.



TWENTY-FIRST THOUSAND.

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PREFACE.

LL little children love knowledge, yet few care for lessons.

How is this? Children like variety; they are volatile,
and can no more keep their minds long fixed on one

subject, than they can keep their bodies long in one position.

Too much constraint is often found irksome and distasteful to the very little ones. Lessons, therefore, of the ordinary kind are not desirable until a child is six or seven years old.

But it is not to be inferred that the mind up to this period is to be left uncultured. Vacant it cannot remain, for there is no period of life in which the memory is so good, and the desire for knowledge so urgent, as in the early years of childhood, before instruction, in the form in which it is usually given, has made the pursuit tedious.

Children delight in asking questions, and those who are fortunate enough to have patient and intelligent mothers and nurses, acquire a great variety of miscellaneous information before they enter the school-room.

This little book is prepared for the assistance of those who have the care of children. The lessons are intended to be read

aloud by the mother to the child, and it will be wise to limit the reading to one lesson daily.

The child will, of course, ask many questions as the reading proceeds, and his interest in the book will be greatly increased, if his remarks and queries are intelligently responded to.

The Author believes that the variety in the following pages will be found one of their principal attractions in the eyes of children and that, without going through any regular course of lessons, they will, by the aid of "Scraps of Knowledge," gain a good deal of general information.



SCRAPS OF KNOWLEDGE.

SUGAR.

you like sugar? Yes, I know you like it; but can you tell me what it is? Where does it come from? Who makes it? It is the juice of a plant called the sugar-cane, which grows in a very hot country. The black men work exceedingly hard in the fields where

the sugar-cane grows. They work under a hot sun all day, and are very tired at night. Poor black men! we do not often think of their trouble when we taste the nice sugar in our tea and coffee. On the next page you will see a picture of the black men working.

They are cutting the cane, and binding it in bundles. They put these bundles into the cart drawn by oxen, and so the sugar-cane is taken to the mill. The sugar-mill has shafts (or arms) like the windmills in England which grind the flour. In the lower part of the mill there are heavy rollers (you have seen a garden roller), and between these rollers the canes are crushed, and the juice runs out into a large leaden basin. It then runs



GATHERING THE SUGAR-CANE.

through pipes to the boiling-house near the mill, where it is boiled and skimmed a great many times. You have seen cream skimmed off the milk; the cream is the best part of the milk, but when the sugar-cane is boiled, the worst part rises to the top. This is treacle, and it is taken off the sugar. The sugar forms itself into grains as it cools. So the brown sugar is made, and in this state it is put in barrels, and sent to our own country. Here the

brown sugar is made white, by mixing it with lime-water and other things, and boiling it again and again, till all the treacle is got rid of. Then it is cooled and stirred till it forms into grains, and begins to turn white. After this, it is poured into moulds in the shape of a sugar-loaf, as you see in the grocers' shops. The sugar-cane grows very high; sometimes it is as tall as three men standing on each other's heads. The leaves of the cane are used for fuel—that is, they are put on the fire instead of coal or wood. The green tops of the cane are sometimes given to the oxen for food.



SUGAR-CANE.



A COTTON PLANTATION.

COTTON.

WHAT makes Ann so happy? She is hard at work, making a new frock for her doll. It is a pretty pink frock, and Ann is sewing very quickly, to get her doll's frock ready before Aunt Lucy comes to-morrow.

Would you like to know what the cotton is made of? The cotton that is on the reel, and the cotton print, both come from the cotton plant. This plant grows in warm countries; it does not grow so high as the sugar-cane. One kind is about the height of a man. This kind you see in the picture. It bears a pale yellow flower.

Have you seen in the garden, when the flowers fade, a little pod or green bag full of seeds come in their place? The pod of the cotton plant is full of soft, downy cotton. The seeds are all cleared away, and then the cotton is fit for spinning. It is put in large bags, and sent in ships to England. The seeds are caten by the natives.

What are natives?

People who are born in any country are called natives of that country. Cotton grows in America, the West Indian Islands, and other places. I will tell you something about the West Indian Islands at another time.

The cotton plant is sown in the spring, and reaped as we reap corn. The black men you see in the picture, working in the cotton-ficlds, are not natives; they are Africans. They were brought over in ships from Africa to work for the white men. The man sitting on a bale of cotton, is watching to see that the negroes do not leave off work. He has a whip. I am afraid it is to beat the poor black men. Africans are called negroes, because their skin is black.

Why is their skin black?

Because negroes live in very hot countries, and if their skin were fair and thin, they could not bear the heat of the sun. So God, in his mercy, has made their skin black and thick, that the sun may not hurt them.

When the cotton gets to England, it is taken to Manchester and other towns, where it is spun into thread, and woven into calico, and printed. There is a machine called a "spinning-frame" which spins a number of threads. These threads are woven together to make calieo. But I must explain these words, to spin and to weave. A spider spins and weaves. To spin is to draw out a thread, to weave is to make it into a web.

Some years ago men used to weave cotton with a hand-loom, or frame,

which they worked in the hand; now it is done by a great machine worked by steam. You cannot yet understand how it works, but some day you will perhaps have an opportunity of seeing these wonderful steam looms at work, and some kind friend will explain to you more about cotton spinning and weaving than I can tell you now. But you want to know what a machine is. A machine is anything that is set in motion by applying force. A watch is a kind of machine; it works with a spring. A steam-engine is another kind of machine; it is set in motion by steam. Perhaps you have seen a sewing-machine; that will help you still better to understand how much a machine can do with a little help from the hand. That pretty pink pattern on the doll's frock is printed on the calico by another machine.



CARDING MACHINE.



THE FARMYARD.

BUTTER AND CHEESE.

THIS is a picture of an English farm. You see the pretty farm-house, the farmer, and his dog, and the farmer's wife. You see too the pigs and the geese, and the hens and chickens. There are the haystacks and the barns.

If you live in the country, you have often seen the mowers cut the hay, and the haymakers turn it with their forks, and you have often played in the hayfields. How sweet the hay smells! You know that it is given to horses for food. There are many different noises in a farm-yard—the pigs grunt,

the geese quack, the hens cackle. If you live in London, it is a great pleasure to you to go to a farm-house in the country, and see the cows milked and the poultry fed.

What is done with the milk?

It is placed into a pan, and allowed to remain for a day. The best part of it, which is called cream, then rises to the top. This is skimmed off, and made into butter.

How is it made into butter?

By being well shaken. It is put into a sort of wooden barrel, called a churn; the barrel is turned round with a handle, and thus the cream is shaken, and changes into butter. If you put a little cream into a very small glass bottle, you can shake it yourself and see the butter come; but you must shake it patiently for a long time. In one part of America * the people have a curious way of making butter. They put the cream into large bottles or dried skins, and these are slung across a donkey's back. After this, the poor donkey is kept trotting round a yard till the butter is made. Cheese is also made of milk and cream. The milk is warmed, and a substance called rennet is put into it, which curdles it. The milk then changes into curds and whey. The curds are white and hard, and nice to eat; the whey is almost like water with a very little milk in it. The curds are pressed very tightly between boards, and thus they become cheese.

· Chili.





AMERICAN INDIANS HUNTING BISONS,

AN AMERICAN PRAIRIE.

In America there are very large plains. A plain is a large piece of ground on which there are no high hills. Some of these plains are covered with grass, others have shrubs and trees, and in others, again, the soil is all swamps and pools. The grass which grows on them is much taller than the grass we see in England. In some parts the grass is as tall as a child of eight or ten years old, but in others it is shorter. Large herds of wild horses, deer, goats, and other animals wander about these plains, or *prairies*, as they are called in some parts of America, whilst in others they are called Pampas.

On the previous page is a picture of an American prairie. The animals you see in the picture are called bisons. A bison is a kind of wild ox, but it is larger and more fierce than an English bull. The Indians hunt the bison, and find its skin very useful. They make their tents of it, and also their beds, and many parts of their dress, and they use its horns as ornaments, either wearing them on their heads, or putting them on the top of their tents. They roast the flesh and eat it. It is a kind of coarse beef, and the hunters enjoy it after a day's hunting has given them a good appetite.

The bison leads a happy life in summer, feasting on the sweet, nice grass; but in winter, when the ground is covered with snow, it is often cold and hungry. I think it would be quite starved, if it were not for its good, strong, broad nose, which it uses like a spade, to shovel away the snow; then it feasts on the grass which lies underneath.



CROSSING THE PAMPAS.



PRAIRIE DOGS.

THE CITY OF DOGS.

THIS is a curious kind of town indeed: it is called the "City of Dogs." There are many such towns in America.

What are those hillocks?

They are houses, but they are not the houses of men; they are made by curious little animals, called "prairie dogs," who live in them, or rather, under them. Do you see the doors of their houses? These animals, as you will see from the pictures, are not very like our English dogs. They are only like dogs in one thing, and that is in the little, sharp, yelping noise they make, which is like the bark of a small lap-dog.

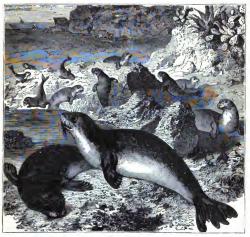
They burrow under ground like rabbits, and are very sociable, not liking to live alone, but preferring to live together in a sort of town of their own making. While there is no danger near, these little creatures sit on their mounds, or pay visits to each other's houses, or run about the streets of their town as if they had important business to do; but when a hunter comes in sight, a sharp bark is heard, there is great confusion for a minute, and then all the dogs disappear into their burrows. The "prairie dog" has a funny way of going into its house. It does not run or creep into it, but makes a jump in the air, flourishes its hind-legs, whisks its tail, and is gone in a moment.

I will tell you a true story, which shows that these little animals, although so wild, have kind feelings towards their companions.

One day a hunter, seeing a "prairie dog" sitting on his hillock, shot him. Another dog, who until then had been afraid to come out of his hole, immediately ran out, seized the body of his friend, and dragged it into the hole. Was not this a brave and kind action? The hunter never again shot a "prairie dog."



PRAIRIE DOGS.



SEALS AT HOME.

SEALS.

SEALS are curious animals, living in the water. They often come on the land and lie on the rocks, in summer, to bask and sleep in the sun. The head of a seal is not unlike that of a cat; it has large eyes, a broad nose,

and holes instead of ears. The rest of its body is like a fish, and it has four very short legs, which are more like fins than anything else. The two fore-feet are not unlike hands; these have sharp claws, by which the seal clings to the rocks and ice. The hind-feet are webbed, like those of a duck. Seals can swim well, but they cannot walk on land; they shuffle and creep about.

The common seal, about the size of a calf, is found in almost all seas,



A MORNING MEAL.

but the larger kinds are found only in the cold northern and southern seas. These have different names. They are called sea-lions, sea-elephants, and sea-bears. They feed on fish, and are very clever in catching them. The seal in the picture, you see, has just caught one, which he has come on shore to eat.

I dare say you have seen seal-skin cloaks, hats, and purses. The skin is useful to us, but to the Greenland Esquimaux it is much more useful. He makes it not only into clothing, but into a covering for his tent, and a casing

for his boat. He could scarcely live without the seal; its flesh and fat form his principal food. He makes use even of its bones and sinews, making his needles and thread, his fishing-lines and bow-strings from them.

There are different ways of killing seals, or rather of hunting them, for they are generally speared to death. Sometimes the men go out in their canoes, and try to surprise them unawares, having the wind in their face and the sun at their back, that they may be neither heard nor seen. In winter the seals are caught while working away under the ice, making their breathing-holes. The cunning Esquimaux finds them out, makes a snow wall to shelter him from the wind, and then he waits patiently for hours without stirring, lest the animal should be alarmed. He even ties his own knees together, that his clothes may not rustle. When the seal has nearly completed his hole, and the ice is very, very thin, the hunter lifts his spear with great caution, and drives it into the poor animal again and again, till it is dead.

Can you imagine a tame seal? I have heard that they have often been kept as pets, and that, when tamed, they show great affection.

A young seal was once caught on the coast of France, and was put into the Paris menagerie. Two little dogs were in the same enclosure, and became very friendly with the seal; they used to mount on its back, and bark at it, and even bite it, but all in play. The seal was very goodnatured; but when the dogs were troublesome, their sober friend had, to give them a little blow with its paws.





WILLIAM WILBERFORCE.

WILLIAM WILBERFORCE.

You have seen the pictures of the black men working in the cotton fields and sugar plantations. Some years ago these men were slaves—that is, they were sold for money, and passed from one master to another without their own consent. They had no choice allowed them with regard to

home, food, or clothing; but were housed, fed, and clothed according to their master's will. This was not the worst part; for their wives and children were slaves too, and sometimes it would happen that a wife or child was sold to another master in a distant part, and so separated from the rest of the family. It was very, very sad, but I am delighted to tell you that the slaves in America are now free. They may choose where to live and whom to serve, and they work better and more heartily than they could do before. They are paid for their services and are treated like men.

This is a thing to rejoice at indeed. I am glad to tell you that England was the first to give up the slave trade, and this good example has been followed by other nations.

Here is a portrait of William Wilberforce. He was a noble, generous, good man, and it grieved him to the heart that anything so horrible as slavery should exist in the world. So he, and others who were like-minded, gave themselves no rest till a law was passed, forbidding slavery in all countries over which our Sovereign rules.

How could he manage that?

When he was a young man he went into Parliament—that is, he got a seat in the House of Commons, where the laws of the country are made. Here it was that he spoke again and again about the cruelty and injustice of slavery, till the English were ashamed of it, and determined at any cost to put an end to it as far as they could.

But there were many difficulties in the way, which it is impossible for you now to understand, and it was twenty years before the Bill was passed that is, before the law was made.

Oh, how happy Wilberforce was when he knew that the slaves were free! He had not laboured in vain. He was thankful as well as happy, for he knew that he could not have succeeded in this great work without God's help, which, no doubt, he had often earnestly asked for.

William Wilberforce was the father of the late Bishop of Winchester.



NAPOLEON BUONAPARTE.

NAPOLEON BUONAPARTE

I WILL tell you of another very famous man who lived about the same time as Wilberforce. He wanted to have a great deal of power, and to rule over many people, so he spent the greater part of his life in battle. Which is best, to rule cr to serve? It is best to do our duty well, according to the state of life in which God has placed us. Most people have both to rule and to obey. Even the Queen, though she rules the kingdom, must obey the laws; and the greatest men in the land are called ministers, because they are servants to the Queen, and they minister to the people also by making good laws. So it is God's will that we should serve one another, and it is wrong to try to get too much power for ourselves.

Napoleon Buonaparte was a Corsican. Do you know where Corsica is? It is an island in the Mediterranean Sea. Look for it in the map. Napoleon Buonaparte was born there. His father was not rich. When Napoleon was a little boy he used to be fond of playing at soldiers, and once, when the snow had fallen very thick on the ground, he and his playfellows made entrenchments with it, and had a sham fight?

What is an entrenchment?

A place made to defend the soldiers—a narrow ditch cut in the earth or snow.

Napoleon was brought up to be a soldier. He was a very clever general, and as the people of France were at that time without a king, he was soon made Emperor of France.' He had a talent for governing, and such pleasant, winning manners that his soldiers loved him. But he was not contented with governing France; he wanted to rule over all the countries of Europe. So he fought a great many battles, and conquered many countries. In the picture, on the next page, you will see him leading on his soldiers.

Not content with the victories he gained in Europe, he took his army to Egypt, where he fought and defeated all who opposed him. He also wanted to conquer Britain too; but a very brave and good man, the Duke of Wellington, was as great a general as Napoleon himself.

The French and British armies met at Waterloo, and they fought a famous battle there, called the Battle of Waterloo. I am glad to say the British won the battle.

The end of poor Napoleon's life was very miserable. He was sent by the British to St. Helena, a little island in the Atlantic Ocean, and there he



NAPOLEON IN EGYPT.

was kept like a prisoner, and put under the care of the governor of the island, till he died.

So he who wanted to rule over all the world was ruled very strictly himself, and was not allowed to go where he pleased for the last few years of his life. He had not so much freedom as any poor man, for whenever he rode out a British officer always went with him, to see that he did not get away from the island.

Napoleon did not like this, and he was very wretched. What a pity he had tried to get so much power for himself!

A great many thousands of men fell in battle, because Napoleon wanted to rule. Is it not much better to spend one's life, like Wilberforce, in doing good to others, than in selfishly trying to get one's own way?

But Napoleon was not without kind feeling, and I have heard some ancodotes which show the better side of his character. I will tell you one of them.

A British sailor, whom he had taken prisoner, managed to get away from his guards, but before he could reach England he was caught and taken before Napoleon.

"Why did you run away?" asked the emperor.

"I wanted to see my mother," was the sailor's reply, and it was an appeal the emperor could not resist.

"Let him go," said he: "the boy must have a noble mother."

So saying, he not only set him free, but paid the expenses of his journey.





THE CUCKOO.

You have heard the cuckoo's note in spring. This little bird comes to us about April, and goes away in June. The cuckoo does not build a nest for itself, but slily puts its egg into the nest of another bird. It chooses the nest of a bird smaller than itself, and one that feeds its young with insects—sometimes a hedge-sparrow, sometimes a titlark, or a water-wagtail.

When the young cuckoo is hatched, what do you think it does to the other poor little nestlings? It throws them out of the nest. Oh, how unkind that seems—for a little strange bird to come into the nest and turn out the rightful owners of it! What should you say to a strange child turning you out of your nursery and taking your place in it, eating your breakfast and dinner, and sleeping in your little bed?

But how can the cuckoo turn the other birds out?

It is larger than they are, and it has a hollow between its shoulders, so it lifts the little birds into this hollow, gets to the edge of the nest, and throws them over. If it did not do this, the cuckoo would get no food at all; and even as it is, the old birds have a weary life in supplying its wants, for it is very hungry, and eats more than all the little hedge-sparrows belonging to the nest together would eat.

Is the cuckoo pretty?

It has a very plain coat of dark grey. It is not often seen, because it is very shy. It feeds on caterpillars, dragon-flies, and other insects.

I will tell you a true story of a kind little thrush that was put in the same cage with a young cuckoo. The cuckoo could not feed itself, and it used to make the thrush feed it. The cuckoo sat on the upper perch with its mouth open, while the thrush hopped down to the bottom of the cage to get food for its friend. Was not the thrush kind? One day a worm was put in the cage, and the thrush could not resist eating it; the cuckoo was so angry, it hopped down from its perch and beat the thrush most cruelly—it even tore out one of its eyes, and then hopped back again. The poor little thrush, though 'it was in such pain, took up more food to feed the cuckoo. I am afraid the cuckoo was a sad tyrant, and the thrush was his slave.





THE LOG-CABIN.

THE EMIGRANTS.

THERE are so many people in England that they cannot all find work to do; there is not room for them all here. Therefore, many of those who cannot find work in England go over to America and Australia—there is plenty of room for them there, a good deal of waste ground to be cultivated, and much work to be done. People who leave their own country to settle in another are called emigrants, because they *migrate*, as the birds do, from one land to another.

Are the birds who leave us in the cold weather, and come again in spring, called emigrants?

No; they are called migratory birds. You see how much the words are alike; they both come from the same Latin word, migro—to change one's quarters.

The first thing many of our emigrants have to do when they get to the backwoods of Canada is to build houses for themselves and their families. They cut down trees, and build their houses with the trunks.* The women and children work very hard over there. In the backwoods there are no servants, so the wives and children of the emigrants do the work of the house; they make the butter and cheese, cook the dinner, and lead very useful lives.

Look for Canada in your map; you will find it in the map of North America. It is separated from the United States by a large river called the River St. Lawrence, and three very large lakes. One of these lakes, called Lake Superior, is bigger than the largest county in England.

 These houses are called log-cabins. You see in the picture how they are put together, and how comfortable they look.





JAMES WATT.

JAMES WATT AND THE STEAM-ENGINE.

 $Y_{\rm OU}$ have often seen the steam come out of the tea-kettle when it is boiling; it looks like smoke.

What is the difference between steam and smoke?

Steam comes from hot water. Smoke comes from burning coal and

other things. If you put a spoon over steam, you will see the steam turn to drops of water again.

Why does it turn to water?

Because it becomes cold.

There was once a very clever man, called James Watt. When he was a boy he used to watch the steam come out of the tea-kettle, and he used to think a great deal about what he saw, and he turned his thoughts to a very good use. Other people had noticed it before him, and they had seen that when the kettle is left on the fire, and the water is boiling, the steam forces the lid up. I dare say you have seen it, too. This shows the power that steam has. It is strong—much stronger than men or animals; and this strength is now made useful to man. Can you tell me how?

You know one way, for you have seen the trains run along, and you know what moves the train. Steam moves it; you have noticed the steam rushing out of the engine.

Did James Watt find out how to make the trains go?

No, he did not. Another clever man, named Robert Stephensen, was the first to propose making this use of steam, and travelling by the help of it. But steam-engines are used for many other purposes; and James Watt improved them so very much, that one may almost say he invented them.

What is "to invent?"

To find out how to do anything, or how to make anything.

What is steam used for besides moving railway carriages?

It is used for turning mills, and for making all sorts of things—paper, lace, muslin, cotton, cloth, &c. You cannot understand much about the wonders of the steam-engine till you are a little older; but remember that James Watt was a useful man, because he thought about things: he used his eyes, and he used his mind too





A MINISTERING ANGEL.

MISS NIGHTINGALE.

THIS is the portrait of a very good and kind lady who is alive now (1871). Her name is Florence Nightingale—is it not a pretty name? Her Christian name, Florence, is the name of a beautiful city in Italy, where she was born And her surname is the name of a plain little brown bird that hides itself in

the woods, and sings more sweetly than all the other birds. It sings, too, at night, when the other birds are silent.

Is Miss Nightingale like her little namesake-bird?

Yes, she is, for she cheers people when everything about them is dark and sad, and many of the poor wounded soldiers who fought our battles about fifteen years ago thought her voice sounded sweeter than the song of any bird.

At that time the English were at war with the Russians, and the English gained many famous victories in the Crimea. But the poor sick and wounded soldiers were not well attended to. At last Mr. Sidney Herbert asked Miss Nightingale to take out some good nurses to the Crimea, and direct and superintend them in their work. Some of these nurses were ladies of rank and fortune, but they gladly gave up the comforts of English life to go out and nurse the sick soldiers. Were they not brave, noble-hearted women? Miss Nightingale, with a few friends and forty-two good nurses, reached Constantinople a day or two before the battle of Inkermann. They took up their quarters in the great hospital at Scutari, and there they remained doing their work of love and mercy. After the battle of Inkermann 600 wounded soldiers were sent to Scutari in a single day. Oh, what a sad thing war is! Poor Miss Nightingale worked very hard indeed, and was very kind and clever, dressing the wounds of the poor soldiers with her own hands, and doing it so skilfully and gently. The soldiers said it did them good to look at her going about among them like an angel of mercy. At last she fell ill with fever, but when she got better she went on with her work, and did not leave it till nearly the last of the great army was on its way back to England. Then, after having been nearly two years in the East, she came back to her father's house in England.

When Miss Nightingale was a young girl she was always benevolent, kind, and thoughtful, anxious to do good and to help others. She used to visit the schools and hospitals in the neighbourhood where she lived, and when she grew older she wanted to see the great hospitals of England, and came to London to visit them. It seemed to her that there was a great

want of good, well-trained nurses, and she was anxious to see the poor sick people better attended to. Finding that there was a good institution at Kaiserwerth, on the Rhine, for training nurses, she went there to learn how to dress wounds and nurse the sick in the best possible manner. And the knowledge she thus obtained was turned to very good account. When she came home she improved the condition of some English hospitals, and afterwards, as I told you, this brave, good lady went over to the Crimea to nurse the wounded soldiers. The English people felt so grateful to her that they gave her a testimonial of £50,000. Miss Nightingale begged that this money might be employed in forming an institution for training and employing nurses. Oh, how thankful we ought to be, if we can in any way help and comfort those who are sick! Very few can do what Miss Nightingale has done, but we may all do something—even little children can learn how to wait gently and quietly on those who are ill.



THE NIGHTINGALE.

THE COCOA-NUT PALM.

THIS is a very pretty and useful tree, growing in extremely hot countries. It grows best near the sea. Its fruit is the cocoa-nut, which I dare say you have seen. There are often fresh flowers and ripe nuts on the tree at the same time. A good tree bears about eighty nuts every year. The leaves grow at the top of the stem, which is slender and tall (from 60 to 90 feet high). The leaves are more than twice as long as a very tall man, and look like immense ostrich feathers. The flowers are pale yellow. Many cocoa-nuts are brought over to England in ships, and are used as wedges to pack the other goods more securely, so nothing is charged for carriage. We eat the fruit inside the shell, and drink the milk. In the very hot countries where it grows, the cocoa-nut palm is most useful. The people make drums and posts of huts from the trunk, they eat the young buds as we do greens, make drinking-cups from the shell, and get oil from the fruit, for burning and other purposes. The leaves, while growing, give a pleasant shade, and when they fall from the tree they are used to thatch the cottages, and are made into baskets, buckets, lanterns, and even books, The people write on these books with an iron You may be sure from this that the leaves are very different from those of English



THE COCOA-NUT PALM.

trees—they are very hard indeed. Now I have told you some of the uses which are made of this pretty tree in the countries where it grows.

Does the cocoa which we drink at breakfast, and the chocolate which is sold in boxes, come from this tree?

No: it comes from another tree, called the cacao tree.

What is chocolate?

The seeds of the cacao tree made into a paste, mixed with sugar, and flavoured with vanilla.

What is vanilla?

Vanilla is the fruit of a plant growing in America, and is used for flavouring sweetmeats, cakes, and especially chocolate.



TOP OF A COCOA-NUT PALM,



BEES IN A GARDEN.

SOMETHING ABOUT BEES.

BEES are very wonderful insects. People called naturalists have spent much time in observing them, and have found out curious things about them, some of which I will tell you.

But, first, what is a naturalist?

A naturalist is one who studies the wonderful works of Nature, and who delights in noticing the habits of animals and insects, and of everything that has life in the animal and vegetable world. A man in ancient times spent fifty years in studying and watching the habits of bees. I will tell you what he and other people have observed about them, and it will give you great pleasure, as you grow older, to watch them at their work, for they are most interesting little creatures. Bees have a queen, and they treat her with great respect. The other bees never turn their backs on her, for that would not be polite. The working bees feed her from their probosces.

What is a proboscis?

A little trunk, such as you see a fly feed himself with. Put some sugar on the table, and the flies will soon come and feed themselves, and you will see the proboscis.

The queen lives longer than the working bees; she sometimes lives two or three years, but the workers ive about six weeks. The queen is the mother of all the hive. The workers build the cells, look for food, and nurse all the baby bees. They have a large nursery full of tiny cradles, where the little ones are laid. They put the royal family (those who will be their future queens) in a different kind of cradle to the rest, and make them lie with their heads downwards. Two or three young ones are chosen for this honour, but the first queen who is reared kills her little sisters, as she chooses to reign alone. The bees are very clever in making their comb; it is most beautiful, with its wonderful cells, all so perfectly shaped. The upper part of the comb is the larder, where the food is kept; the lower part is the nursery. The larder is full of pots of honey; the nursery is full of little bees, in what is called the "larva" state. In this state they have no wings, but are like small worms.



MINERS AT WORK.

COAL.

IT is pleasant in winter to sit round the fire, and we are glad to have plenty of coal to feed it with. Do you know where the coal comes from? It is found in pits under ground, and men called "colliers" go down into these pits to dig up coal for us. They are let down in the morning and brought up at night by ropes, having a basket attached, in which they stand. Many of these colliers are brave, good men. They are exposed to great dangers; for there is a bad kind of gas, or air, in the pits, which hurts the health; and sometimes there are what are called explosions—that is, the gas

takes fire, and the poor men are burnt and killed. There are dangers, too, from water as well as fire, for there is water generally at the bottom of the coal-pits.

I will tell you a true story of a collier named Stephen Page. He was working with some other men in a coal-pit in Shropshire; they had all had their suppe, and were preparing to go home, when they found it was quite impossible to get out of the pit. Some water from the bottom had risen very high, and there was no possible way for them to get out.

I must explain that there are chambers and passages in the pits. Some-



MINERS AT WORK.



MINERS AT WORK.

times the men have to work in a small space where they cannot stand upright, and they are obliged to stoop, or lie down on their side, for hours together.

I suppose these men I am telling you about were in one of these chambers. It was very dreadful. They had no food left, and they had only a little bit of candle. At last the candle went out, and they were left quite in the dark. The men were ready to despair; but Stephen Page said, "The light still shines in heaven!" The poor man knew that God's love, like the sun, was shining above him, and he believed that God would take care of him. He and the other men prayed very earnestly many, many times; and it pleased God to hear them, and to save them.

Some of the men were in the pit four or five days, and some a whole week. Are you not glad that they were saved at last?

The men up above kept pumping the water out, and some brave men went down, and floated to them, and brought them up alive.

Only one died out of the whole party.

It was Sunday when they came up from the pit; and the next Sunday they went to the village church, and gave thanks to God for their wonderful deliverance.

What is coal?

It is the remains of trees and ferns which have been buried under the earth for thousands of years. Is it not wonderful that wood should turn into coal?

When we enjoy the comfort of the fire, we should not forget the poor colliers who work so hard, and go through so much for our convenience.



DESCENDING A MINE.

THE DEAF AND DUMB BOY.

THE little boy in the picture on the next page, who is bringing the flowers to his sister, is deaf and dumb. He never heard the birds sing, or the wind blow, or any of the sounds that you hear every day. He is quite deaf; he cannot hear his mother speak, or his sisters and brother laugh and play; he cannot hear music and singing. Oh, how sad it is to be deaf! And because he cannot hear he is unable to speak. You hear others talk, and so you learn to talk, but this poor boy never heard a word spoken in all his life. Yet he is happy, for though he cannot hear words, he can read them when they are written, and he can talk very fast on his fingers. He knows, too, that God loves him, and that one day, when he is taken to heaven, he will be able to hear well, and to sing God's praises for ever. He likes to make others happy. He has just been making a wreath for little Mary's hat. He is now bringing flowers to his eldest sister Alice. She asked him to pick them for her.

How did she ask him?

She pointed to the flowers, and then she pointed to herself, and made a little bow instead of saying "Please." Tom understood her, and he is glad to help his dear, kind sister, for she is always good to him. I hope, if you meet with a deaf and dumb child, you will be very kind to him, and try to make him happy. Pictures will please him, and he will be delighted if you can talk to him a little. Will you try to learn the deaf and dumb alphabet on your fingers?

When our Lord was on earth he was kind to the deaf and dumb. You may read in the seventh chapter of St. Mark how he took a deaf and dumb man apart, and put his fingers into his ears, and touched his tongue. "And looking up to heaven, he sighed, and saith, Be opened." And his ears were opened, and the string of his tongue was loosed, so that he could hear and speak.



THE DEAF AND DUMB BOY.



BERNARD PALISSY.

CUPS, SAUCERS, AND JUGS: HOW THEY ARE MADE.

What are cups and saucers made of, and why are they called "China?" What do you think?

Do they all come from China?

Ah, you are very near it. We English people are clever now in

making these things; but little more than a hundred years ago we were obliged to have most of our earthenware from other countries.

What is earthenware?

Cups and saucers, jugs, pots, and dishes. All these are earthenware, because they are made of earth.

The best kind of earthenware is called "porcelain," and the best porcelain comes from China.

How can cups and saucers be made of earth?

I will tell you. Different kinds of earth or clay are mixed together. The places where this is done are called "potteries." Staffordshire is famous for its potteries. Clay of different kinds is thrown into immense tubs or vats; water is mixed with it, and it is boiled. Then the water is taken away, and the boiling earth is beaten about till the air is driven out, and it is quite solid. While the clay is soft, it is moulded into the shape of pots, cups, jugs, &c., with the hand. These are carried into a heated room to harden. They are then given to the turner to ornament and polish. You must see this done in order to understand it. The handles and spouts are made by a man called the "handler," who makes them in moulds, and sticks them to the cups and teapots with liquid clay.

What is liquid clay?

Soft clay. Liquid means soft, like water; solid means hard, like the table.

I told you that a little more than a hundred years ago the English were not so clever as other people, in making cups and saucers and vases. But about that time a clever man, called Mr. Wedgwood, found out how to make many beautiful kinds of earthenware. He was born in Staffordshire, and worked in his elder brother's pottery when he was eleven years old. He was one of those boys who think; and he not only did his work, but he thought about it, and tried, as he grew older, to make better earthenware than had ever been made in England before. And like most people who try and try again, he succeeded at last. He found out how to make pretty little ornamental pictures, like sculpture, on vases, and he found out also

a good way of painting on china. He was very good and industrious as well as clever, and he became a rich man, and built a beautiful house for himself near Newcastle-under-Lyme, where he died.

I must tell you of another famous potter, named Bernard Palissy. He was a Frenchman, and lived about 300 years ago. One day he happened to see a most beautiful enamelled cup, and he was told that the secret of making this enamel was known only to a few Italian artists.

He determined to find out this wonderful secret; and he would not be discouraged by any difficulties. He had an immense furnace made, and he would not suffer the fire to go out night or day, while he tried first one way and then another to produce the beautiful enamel.

It is said that he even threw his chairs and tables into the fire, and tore up the floors of his house, to feed it when he thought it was going out for want of fuel.

You may imagine how happy he was when he found out the precious secret at last; and his poor wife, whose patience must have been sadly tried when she saw everything put into the furnace, was very glad too. They soon became quite rich, for the king and all the grand people in France ornamented their houses and gardens with this beautiful enamelled earthenware.





DESTROYING AN ANT'S NEST.

ANTS.

COUNTRY children know very well what ants are, and even children in towns may sometimes see them, as they are fond of going where they are not wanted, and stealing breadcrumbs and other nice things out of people's larders.

They are busy little creatures, and you will be glad to know more about

them. They seem to have a great deal of sense, and I am sure you will be surprised to hear how clever they are.

They live in little kingdoms together, and have laws of their own like the bees. And they also have a queen, who never leaves the nest, and is fed by the working ants.

The workers have no wings. They are very good and industrious, and if you watch them, you will see them very busy running about all the time.

What are they doing?

Oh, they have a great deal to do. They make the nest, and then they have to find the food. They nurse the little baby ants, too, and are most careful of them. These baby ants are called "grubs." On fine days you may see the kind nurses carrying the little things out of the nest to warm them in the sun; and when rain comes, they carry them back very carefully indoors. Ants do not sting, but they bite, and their bite is like the sting of a nettle.

There are many different kinds of ants, and they make their nests in different ways. Some burrow in the ground; others pile up little hillocks; and others make a nest among the branches of the trees.

A blind gentleman, named Huber, who spent much time in observing ants, tells us that these little creatures talk to each other with their feelers. Is not that a funny way of talking? The proper name for these feelers is "antennae," but that is a hard word to remember.

How could this blind gentleman watch the ants, and find out their ways, if he could not see them?

He made use of other people's eyes. He had first a good servant and then a kind wife, who watched for him and told him all they saw. They lent him their eyes, so that he could perform his work just as if he had the proper use of his own eyes.

We must all try to help each other, and especially we ought to be glad to help the poor blind people, and tell them what we see. This clever gentleman thought that ants could remember each other after having been a ANTS.



INTERIOR OF AN ANT'S NEST.

53

long time separated. I will tell you what made him think so. He took some ants wild from the wood, and put them in a glass hive in his private sitting-room; but he let some of them get away into the garden and make a nest there.

So there were two families of ants; there was the queen of the hive with her family, and there was the queen of the garden with her family. Now, after the hive had been kept four months in this gentleman's room, he took it out one fine summer's day and put it in the garden, at some little distance from the queen of the garden's nest. But the ants found each other out and remembered each other; they ran to their old companions and stroked them lovingly with their little feelers. Then the garden ants took the others up in their jaws, and carried them to their pretty little garden house. I dare say they all told each other they liked the nest in the garden much better than the glass hive, and so they settled to live together, and, I dare say, were very happy ever after.

Is not this a pretty story? It is quite true.

The large ant-nests or houses which you see in the picture on page 51 are made by white ants or termites, which live chiefly in hot countries.

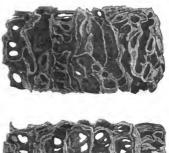
Now I will tell you about one kind of termites which is common in Africa.

These make their nests of clay; they make them about twelve feet high, and a cluster of them looks like an Indian village. The ant-nests are indeed often larger than the huts in which the natives live. The little insects who make these immense houses, and live in them, are not more than a quarter of an inch in length.

It is only the lower part of the house that is inhabited by the ants. The king and queen's drawing-room is in the centre of the building. Perhaps you will call it a prison, for the doors are so small that the king and queen can never come out—they have to pass their lives there. Next to this drawing-room are a great many rooms of different shapes and sizes, in which the servants live who are constantly in attendance on the king and queen. Next to these come the nurseries, where the eggs and young ones.

are taken care of, and also the store-rooms, which are at all times kept full of provisions.

Is it not wonderful that such tiny creatures should be able to build these grand houses? You see how much may be done by a number of little people working together





EXCAVATIONS SHOWING THE INTERIOR OF AN ANT'S NEST.



OVERTAKEN BY THE TIDE.

THE SEA.

NEARLY three-fourths of the earth is covered by the sea. Have you ever been to the sea-side and watched the tide come up?

What is a tide?

A tide is the water falling and rising, or ebbing and flowing, as it is called. In the picture you see the poor boy on the rock—the water is nearly all round him. An hour ago it was quite dry where he was standing, but now the water has risen, and he cannot get back to land. Soon the water will quite cover the rock then it will be high tide. Poor boy! he looks frightened, but the men see him and will send out a boat to bring him back.

The sea takes six hours to rise. If you stand upon the beach, and watch the waves as they roll in one after the other, you will find they come nearer to you every minute, and if you do not take care they will wet your feet and splash you all over. But children do not mind a little sea-water; it is play to run away from the waves. When it is high tide the sea seems to rest—it neither comes forward nor goes back for about a quarter of an hour; then it gradually ebbs back.

When it has gone as far back as it will, it is low tide. Then you can wander about on the sand, picking up shells or sea-weed, or make houses and castles with the sand. It is wonderful to see a great sandy plain where a few hours before there was only sea, and then in a few hours more it is all gone again—at least, it is gone out of your sight, for it is covered by the waves. Oh, how pleasant it is to hear the sound of the waves, and to see them dancing about and glittering in the sunshine! Or, in stormy weather, how grand it is to hear them dashing against the shore, and to see the wonderful white foam! It is indeed most beautiful, but it is sad to think of those who are on the sea in ships, and who are being tossed about on the waves.

What is the colour of the sea?

It is pure blue; that is its own true colour, though, if you were to take up a little in a jug you would not think so.

Why, then, does it often look green or brown or a pretty bright purple? It seems to change its colour sometimes almost every minute. Why is this?

Because it reflects the colour of the sky and the clouds.

There are immense quantities of very tiny sea-worms and sea-weed floating on the surface of the ocean, and these affect its colour. The Red Sea is made red by the sea-weed, and yet this weed which colours the water is so small, it can only be seen through a microscope.

What is a microscope?

A glass which makes objects seem much larger than they really are. This glass shows us wonderful things, which we could not see or know without its help.

I was speaking about the colour of the sea. There is one sea with a very long name which is famous for its beautiful blue colour. It is called the Mediterranean. The North Sea is green, partly because its water is not so clear, and partly from the reflection of its sandy bottom mixing with the blue water.

Columbus, who was a famous sailor, says that in the Caribbean Sea the waters were so clear that he could see thousands of fishes of most brilliant colours swimming about, besides lovely sea-plants, corals, and sponges. It looked like a beautiful garden under the sea.



SEA-WEEDS.



SEA-BIRDS' HAUNT.

MORE ABOUT THE SEA.

How deep is the sea? and what is at the bottom of it? Does any one know?

Yes; wise men have found out a way to measure the sea.

Every vessel of the navy is supplied with a quantity of twine wound on

reels. But I must explain that a vessel of the navy means a ship belonging to the Queen and the country, and used for defence or war. The captain takes this twine out with him. He ties one end of it round a cannon-ball, throws the cannon-ball over into the sea, and the reel unwinds itself as fast as it can,* till the ball reaches the bottom. Thus, by measuring how much twine is unwound, they find out the depth of the sea.

This is called sounding the sea. The cannon-ball is called the plummet.

But how deep is the sea?

The sea is very unequal in its surface. It is, like the land, full of mountains and valleys. There is no part of the land that has not, at some time or other, been under the sea.

Give me a map of Europe, and I will show you some of the seas, and tell you about them.

The Black Sea is nearly two miles t deep in some parts, the Mediterranean four miles.

Is the English Channel as deep as these seas?

No; it is not nearly so deep. Some parts of the great Atlantic Ocean are eight or nine miles deep, and the Pacific is deeper still. Those clever men who were so anxious to know the depth of the sea wanted also to find out what is at the bottom of it. How do you think they managed this?

They tied the barrel of a quill to the bottom of the sounding-line, and with this contrivance brought up bits of the things which lie at the bottom of the sea.

What did they find there?

Something that looked like common clay; but when it was put under a powerful microscope, it was found to be a quantity of very tiny, tiny

This can be explained to the child by showing a marble tied to a reel of cotton, and allowing the reel to untwine.

[†] A mile must be explained to the child by giving the distances of some places with which he is familiar.



A STORM AT SEA.

shells. The bottom of the ocean is a great burial-place. There lie the anchors of many ships which have been wrecked, the bones of dead men who have been drowned, and the shells of shell-fish (or mollusks, as they are called) which have lived and played in the sea.



SEA-WEED AND MOLLUSKS.



THE STRAITS OF MAGRILLAN.

FERDINAND OF MAGELLAN.

FERDINAND OF MAGELLAN was a Portuguese—that means he was born in Portugal. He was of noble birth, and was educated at the royal palace. When he grew up, he wanted to explore the ocean and find out new countries. He became what is called a navigator. One thing he wished to do was to find a new road to India across the Atlantic.

Shall I tell you some of the adventures he met with on his way? He set out from Spain with five ships. The ships in those days were not like our ships, for Magellan lived more than three hundred years ago, long, long before people had found out the use of steam. They were small, badly made sailing-vessels; so that navigation, or travelling in ships, was much more difficult and dangerous then than it is now.

In these days sailors have many helps from the experience of those who have gone before. They have maps showing where the dangerous rocks and shoals are, so that they can steer clear of them. And, besides this, the vessels are much more strongly built.

Well, as I told you, Magellan set out with five ships. The captains of the four other ships were Spaniards, and they did not like Magellan, because he was a Portuguese. After sailing a long way down the Atlantic, he found a good port on the south-eastern coast of South America, and as winter was approaching, he thought it would be well to stay there.

For two months the people in the ships saw no creature on land: at last, one day they saw a man of immense size, quite a giant, nearly naked, on the sand, dancing and singing, and throwing dust on his head.

The captain sent one of the sailors on land, telling him to dance and sing in the same way, as a sign of peace. The giant seemed to understand him, and conducted him to a little island. Then the captain and others in the ship followed. The giant raised his finger to heaven. I think he wanted to say that he believed his strange visitors had come down from the clouds.

He was such a big man, that the heads of the sailors hardly reached to his shoulders; he had a good figure, a large face painted with red, patches of yellow round his eyes, and two spots in the form of a heart on his cheeks. His hair was white with powder. His dress was made of the skins of beasts, and he wore slippers also made of skin.

The captain gave him something to eat and drink, and made him several presents. Among other things he gave him a large steel mirror. You know that you can see yourself in bright polished steel. What do you think the giant did when he saw himself reflected in the mirror?



PATAGONIAN ENCAMPMENT.

F.

He started back with fright, and threw down four men who were behind him.

Soon another giant appeared. Magellan called them Patagonians, because they were such tall, fine men and had, of course, large feet, which seemed immense in their clumsy shoes. "Patagon" means large feet. It is a Spanish word. That country is now called Patagonia; it is marked on the map. All the people of the country are very tall and strong.

But I must go on with the history of Magellan and his companions. Many of the crew suffered so much from the cold during that winter, that they rose in open mutiny, and insisted on going back to Spain.

What is a mutiny?

A rebellion. When people rise up against a king or queen that is a rebellion, and when sailors or soldiers rise up against their captain, it is called a mutiny.

What did Magellan do?

He punished the leaders of the mutiny, and would not be persuaded to, give up his undertaking. So he sailed on southwards, and soon reached the straits which are called by his name. See them on the map between Patagonia and Tierra del Fuego. One of his ships deserted him here, and went back to Europe, and he found it very difficult to persuade the other captains to follow him into the unknown channel which was to lead them to an unknown ocean.

After spending about twenty days in winding through these dangerous straits, they at last got into the open ocean, the sight of which filled Magellan with delight. Happily for him, the weather was beautiful, and a kind easterly wind filled the sails of the ship, and drove it straight onwards. He called the ocean the "Pacific" because it was so friendly and peaceable to him. "Pacific" means peaceable, but I am afraid that great ocean does not always deserve its pretty name.

For more than three months they sailed on, but found no land, except two uninhabited rocks, which he called "Desventuradas," or "Wretched." After suffering droadfully from hunger and disease, he at last got to some islands which you will see on the map, the Ladrones.* These islands were very fruitful, and the poor half-starved men were delighted to find plenty to eat. Their spirits improved, and their health returned.

Then they went on to the Philippine Islands,† I am very sorry to tell you what happened there, but I am writing a true story, and unfortunately it has a very sad ending.

Poor Magellan was attacked by the natives of those islands and killed. He fought bravely at the head of his men, but the natives were too many and too strong for him, for they were in great numbers and well armed. Many of his men were also killed.

Did any of them ever get back to Spain?

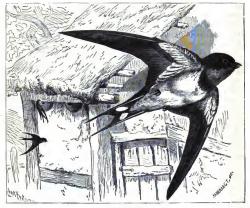
Yes, some of them did. His companion, Sebastian del Cano, took the lead after his death. He returned by the Cape of Good Hope, so he sailed all round the world, and I believe he was the first who ever did so.

How long was he about it?

Three years and twenty-eight days.

Ladrones, or thieves.
 † So called after Queen Mary's husband, Philip.





SWALLOWS.

SWALLOWS.

SWALLOWS are great travellers; they come to us in spring, and go away to spend the winter in warmer countries: they do not like the cold. Is it not wonderful that birds should be able to take such long journeys over sea and land, and find their way so cleverly, as to come back to the very same place where they built their nests the year before? This they often

do. I have read a true story of a swallow that built its nest several years in succession on the bracket of a lamp, in a covered passage leading from a gentleman's house to some outbuildings.

The lamp was lighted every night, but the swallow was not at all disturbed by it. The same swallow, it is believed, afterwards built its nest under the wooden cover of a large bell in the very same passage. The bell was rung several times a day, to call the servants to their meals; so I think this was a bold swallow, and not easily frightened by light or noise.

There are four different kinds of swallows that visit England in the summer. They all live on gnats, midges, small spiders, and flies, and they catch them while in the act of flying. If we had no birds, the insects would increase so much, that they would not only be a great annoyance, but would eat all our fruit and vegetables, and spoil our trees and flowers. So I think we ought to be grateful to the birds, and not grudge them a little fruit sometimes.

Where does the swallow build its nest?

On the sides of cliffs, the insides of chimneys, the tops of towers, and spires of churches, and often under the caves of houses. Their feet are so curiously formed that they can easily hold on to upright walls, if the walls are not perfectly smooth. Their wings are remarkably strong, and their legs very small, and their bodies are exactly formed for flying a good deal in the air. Swallows are nearly always on the wing; they have wonderfully keen eyes, too, and can see the tiniest fly when it is darting along at its utmost speed.





CAPTAIN COOK.

CAPTAIN COOK.

I AM now going to tell you about a navigator who lived 250 years after Magellan. He set off on his first voyage about a hundred years ago. His name was Captain Cook; he was the son of a labourer, and began life as a common sailor. But he was one of the boys who think. He was clever

and persevering, and anxious to learn. His eyes and ears were always open to gain knowledge; so he rose to be a famous captain, and he took three voyages completely round the world, and greatly helped all navigators who



CAPE HORN.

have lived since his time, by his observations. He made many important discoveries, and all that he did, he did *thoroughly* and well.

I told you what a troublesome passage Magellan had through the straits which bear his name. Captain Cook found that the best way of getting into the Pacific was to go round Cape Horn.* First he visited some islands

^{• &}quot;Horn" means "peak."

which are very close together, and he called them the Society Islands, in honour of the Royal Society at London. Then he sailed on to New Zealand, and found that a strait separated it into two large islands. This strait is called by his name. He spent six months in surveying New Zealand.

What is surveying?

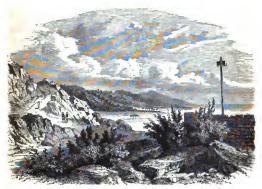
Measuring land, and examining the most striking points of a country, for the purpose of making a map. It is by such observations that our maps are formed, so that the knowledge which is gained by one man is written down for the beneft of many. Captain Cook then sailed on to Australia, and examined it all closely in its full length of 2,000 miles. Think what a labour that must have been!

The sea in which he and his men were cruising about is so full of dangerous rocks, reefs, and shoals, that if the captain had not been very careful and experienced, he must have been wrecked. He was in great danger once. The vessel struck on a hidden rock, and was dashed by the waves up and down against it. You may fancy how much alarmed every one was!

The ship had been lifted over the ledge of a rock, and lay in a hollow inside the reef. The poor ship got very much broken, and let in the water sadly.

The men threw all the heavy things overboard, to lighten the ship, and worked very hard pumping the water out; it was as much as they could possibly do, and they were so exhausted with their hard work, that they lay on the deck nearly fainting. At last they got the ship over the ledge of rock into deep water, and plugged the largest hole as well as they could; then they sailed on to a port in Australia. When they got there, they found a much larger hole at the bottom of the ship, that was almost entirely plugged or stopped up by a piece of rock, which had broken off and stuck in it. This hole was so large, that if it had not been filled up in this extraordinary manner, the vessel would have sunk. All in that ship must have felt most thankful to God for this deliverance.

Captain Cook was always very kind to his sailors, and took great care of their health. The last island he discovered was Owhyhee, the largest of the Sandwich Islands. There poor Captain Cook was killed by a native, who struck him with a thick club.



CAPTAIN COOK'S BURIAL-PLACE.



BEAVERS,

THE BEAVER.

THERE is a very clever animal called the beaver. It does not live in England now, though many hundred years ago there were beavers in our island.

Where do the beavers live now?

They live in the lakes, ponds, and rivers of North America. They build most comfortable houses for themselves, and are very industrious. They work in the night. Shall I tell you how they build their houses? They have four very sharp, strong teeth, with which they can bite so well that they by degrees cut down trees with them, and with these trees they make their houses. They gnaw the tree all round, cutting it rather higher on one side than the other, so that it may fall in the right place.

The trees with which they make their dwellings are willows, birches, and poplars, and they cover the outside of their houses every autumn with fresh mud. The mud freezes as hard as a stone, and keeps them safe and comfortable. They eat roots, vegetables, and berries, also the bark of trees. They lay up a store of food for the winter, but in spite of this they get very thin towards spring. However, by the beginning of autumn they are fat and bonny again, having feasted well during the summer.

The most wonderful thing the beavers do is to make a dam across a river, so that they may have a sufficient depth of water, and not too much, at all seasons. These dams are made of branches of trees, mud, and stones—very thick at the bottom, so that the constant movement of the water may not wear them away. Beavers made dams long before the millers ever thought of using them. This wonderful power which animals have of providing for their own wants is called instinct.

Beavers are sociable—that is to say, they like to live together. I have told you that they are industrious animals, but I ought to have told you, also, that some are idle—these live in no houses and make no dams. It is very easy to catch these idlers. The beaver's fur is valuable.

Do beavers hurt people?

No; the Indian women and children sometimes make great pets of them.



SAGO PALMS.

SAGO

You have often eaten sago pudding. Do you know what sago is? It is the pith of a tree which grows in several of the islands of the Malay Archipelago.

The sago tree is a kind of palm; it grows in swamps. When it is ten or fifteen years old it flowers, and then dies. When sago is to be made, a full-grown tree is picked out, just before it is going to flower. They cut it down close to the ground, and clear away all the leaves and leaf-stalks, and take a broad strip of the bark off the upper side of the trunk. The pith is then cut or broken down into a coarse powder. It is afterwards washed and strained, and the sago starch is separated from the fibrous part.

What does fibrous mean? Having fibres or strings.

The fibrous part is not good to eat; the starchy part only is used for food. This is made into large heavy parcels, and neatly covered with sago leaves, and sold as raw sago. They make sago bread and cakes in the islands where this curious tree grows. The cakes are very nice mixed with butter and sugar and grated cocoa-nut. Many of the people in the island have neither vegetables nor fruit, but live almost entirely on sago and a little fish. It is very strange to see a whole tree-trunk thus turned into food with so little labour.



NATIVES OF THE TIERRA DEL FUEGO.

THE CHILD WHO WAS SOLD FOR A PEARL BUTTON.

A GENTLEMAN named Captain Fitzroy once brought a little boy from Tierra del Fuego to England. This child was sold to the captain for a pearl button. Poor little boy, his mother could not have cared much about him. What do you think the captain called him? He gave him the name of Jemmy Button. Was it not a funny name?

He brought also a young girl, whom he named Fuegia Basket, and another boy called York Minster.

Was he called York Minster after the cathedral in York?

No. There is a great rugged mountain in Fuegia to which that name has been given, and this boy used to live near that mountain. The kind captain sent these children to school, and paid to have them taught; and while they were in England they had the honour of being presented to King William and Queen Adelaide.

These children remained in England three years. At the end of that time Captain Fitzroy took them back to Fuegia. Jemmy was short and fat; he was rather vain of his appearance. He used always to wear gloves, his hair was neatly cut, and it troubled him very much if his shoes were dirtied. York was not so intelligent. Fuegia was the most clever of the three.

They were all landed at the same spot, a pleasant-looking place where Jemmy's family lived. When he met his relations do you think he was pleased? No; he only stared at them, and they stared at him.

Three large wigwams were made for the three half-civilised young people, gardens were planted for them, and the captain gave them all they could want, and hoped they would become the means of improving their savage fellow-countrymen. Alas! when Captain Fitzroy paid them a visit twelve months after, he found the wigwams deserted and the gardens trodden under foot. Jemmy Button came paddling up in his canoe, but instead of being fat, clean, and well-dressed, he was turned into a thin, miserable-looking savage, his hair long and unbrushed, with no clothing but a piece of blanket round his waist. He had a wife that was better-looking than most of the women. He kindly brought two beautiful otter-skins for two of his friends, and some spear-heads and arrows, which he had made with his own hands, for the captain. York Minster had married Fuegia, and had behaved very badly to poor Jemmy. He had built a large canoe and had gone off to his own country near the mountain, taking with him all Jemmy's property.

Eight years after this an English vessel stopped at the island, and the sailors saw a woman who said, "How do? I have been to Plymouth and

London." This must have been Fuegia. The last we heard of Jemmy was from Captain Snow, in 1855. He was as wild and shaggy as his untaught countrymen, but he had not forgotten English. He said that he loved England, but he loved his own country still better, and he would never leave it again, nor allow his children to do so.



FUEGIANS,



VIEW IN ONE OF THE MELANESIAN ISLANDS.

A GOOD WORK.

MELANESIA is the name of an immense number of islands (more than 200) in the Pacific Ocean, the nearest of which is about three weeks' voyage north-west of New Zealand.

Some of these islands are very hot and thickly wooded, so that after a day's rain the damp, steaming air brings fever and ague. They are so unhealthy that white men cannot live in them, and they are all inhabited by savages, who speak different languages. The people in one island often cannot understand what the people in the next island say. They are all

very savage-looking; in one group (the New Hebrides) the natives are almost black, with woolly hair; they wear no clothing in any of the islands, and know nothing, except how to use their bows and arrows. They are almost as fierce as wild beasts, and as ignorant.

But I am going to tell you of two noble-hearted men, who have not been discouraged by any difficulties, but have gone boldly to the help of these poor islanders, and striven to make known to them the love of Christ. Their names are Bishop Selwyn and Bishop Patteson. Nearly thirty years ago Dr. Selwyn was made Bishop of New Zealand; and while there he longed to teach, not only his own people of New Zealand, but the poor ignorant people in these little islands to the north-west.

There were many great difficulties in the way. When the natives saw a boat coming, they would stand on the shore with wild gestures and noisy cries, and would sometimes send off poisoned arrows to try and kill the people in the boat. They did not know any better. They had been brought up to spend all their time in fighting, and had never been taught that our Saviour came down from heaven to teach us to love one another.

There was another danger too. There is no clear sea-map or chart of that part of the Pacific Ocean. When a captain has a chart to steer by, marking every shoal and rock that he is to avoid, he is comparatively safe. But there is no complete chart yet made of the Melanesian Sea.

However, Bishop Selwyn felt that he had a message to take to these poor men from his Father in heaven, and he was not to be deterred by difficulties.

What was the message?

"Christ Jesus came into the world to save sinners," and "If God so loved us, we ought also to love one another.'

Bishop Selwyn is a good seaman, and in these voyages he took his turn with the sailors on deck, or with the steersman at the rudder. One night, when he came on deck for his turn of watch, he saw close, close at hand, white waves curling and foaming round a reef—the vessel all but touched it—in another moment she must have struck! God, in his great love, had kept them safe, and we may imagine how full of thankfulness every one on board must have been.

But what did they do to keep the vessel from striking?

Oh, when they saw the reef, they steered away from it directly; but it was a very narrow escape.



NATIVES OF NEW HEBRIDES,

Bishop Selwyn first visited the Melanesian Seas in 1848, and seven years after that—in 1855—another good and noble man called John Coleridge Patteson, left England, to devote himself to missionary work in the Isles of the Pacific. In 1861 Mr. Patteson was made Bishop of Melanesia. So these two bishops worked together, and I think you will like to hear of the way in which they carried on their work.

They went without any arms, or guns, or swords, trusting in God's care and protection. And he did protect them. I will tell you how the bishops

used to approach an island. They would leave their boats some yards from the reef, where many people were standing and shouting; they then plunged into the water, carrying many presents on their backs—they had been showing these presents to the astonished crowd out of the boat. If they could find out the name of the chief, they would call to him. The chief then stepped forward; the bishops handed him a tomahawk, and held out their hands for the chief's bows and arrows.

Then the chief would throw the tomahawk behind him, to show that the white men are safe, and may trust him. The children in the islands were surprised to see the coats, socks, and pockets of English people, and thought they had two or three skins. They soon gathered round to examine everything. The bishops patted them on the head, gave them fish-hooks and red tape, and by their presents and kind frank manners succeeded in winning their hearts. They then would persuade some of the natives to let their boys return with them, so that they might be taught and trained for teachers. Bishop Selwyn tells of a boy twelve years old, whom he once found in company with a sick English sailor. The boy was doing all he could to help the poor sick man, fetching everything he wanted, and waiting on him most kindly. The bishop took the boy back to his native island; but one of the natives said the boy's father had been driven away and robbed, and he advised the boy not to venture on shore. So the kind bishop took him home, and treated him like his own son. He did not live long, however, but he was very patient all through his illness. In the middle of the night he was always so thoughtful as to say, when they were watching him, "Why do you not go to bed? you will be tired." One night he said, "Papa," and putting his arm round the bishop's neck, died peacefully, and his adopted father mourned for him as for his own child.

The natives of the islands in the Melanesian Sea lead an idle life, eating, drinking, and sleeping, lying on the warm coral rock, or bathing in the sea—very much the kind of life that a seal would lead, but not so harmless; for these natives used to kill people with poisoned arrows, and they had other bad ways which are too horrible to talk about.

How do they manage to get food?

They live on the fruits which grow in the islands. They make their houses of bamboos, tied together with the fibre of the cocoa-nut, and thatched with leaves. The natives are very much improved now, especially on one of the islands, named Mota. Here they have quite left off shooting people with poisoned arrows, and they are always pleased to see their white friends from New Zealand, who can land there in perfect safety now.

See what good, brave men can do who trust in God, and love the poor heathen, and are willing to risk their own lives to make known the Gospel of Christ. Those who go to distant countries to preach to the heathen are called "Missionaries."





GREENLANDERS.

AN EVENING IN A GREENLANDER'S HUT.

THERE is a place very far to the north, which is called Greenland. Find it on your map. It is a very large place, but we do not know much about it; we know that a great part of it is covered with ice and snow, and has never been trodden by the foot of man. It has quite a wrong name, for trees and

plants cannot grow well in such a cold place. I am afraid the man who gave it its name was not quite honest; he wanted to persuade his countrymen to make a colony there, so he gave it a fine name to tempt them to sail with him

Who was he, and what country did he come from?

His name was Erik, and he came from Iceland. He did persuade a good many people to go over and settle there.

All we know of Greenland is that part of it which is by the sea. The interior of Greenland seems to be like a great field of ice, and no human being could live there. But by the sea-coast there are many villages—huts built of stone, or in summer, tents hung with skins, and in these huts live the poor Greenlanders. There are a great number of Danes there too, and a few Englishmen.

I am going to give you a true story about an English gentleman who was invited lately to spend an evening with a Greenlander in his hut, and take "kavit." Kavit is very strong coffee. The Greenlanders are not allowed to drink spirits, but they are very fond of this coffee, which they make quite black.

The Greenlander's name was Samuel. He was a very elever hunter, and a maker of many curiosities. His hut was clean and neat; there was a Dutch clock in it, a cupboard, and a good many pictures on the walls. While the coffee was being made, Samuel showed the gentleman his tools, and how he used them; he showed his spears and harpoons, and a work-box he had made for his wife.

What is a harpoon?

It is a kind of dart, with a barbed point, which the Greenlanders use for killing whales. Samuel then played a tune on the fiddle, and the young people danced most joyfully to it. He also brought out an accordion, and apologised for its being out of tune, as he said he had been obliged to open it, to show the children where the sound came from! Then they took their coffee. The Greenlanders all praised the Englishman, and said he was good, and that they would have sick hearts when he went away. Would you like

to hear the words they used? They said, "Efflete eyunelak Tuluit," which means, "You are the good Englishman."

There are very few children above nine or ten years old who cannot read and write. This is in Danish Greenland. It is called Danish because the Danes have made a colony there. The Greenlanders are honest, they never steal; but I am sorry to say the women are untidy and idle.



GODTHAAR, GREENLAND,



EASTERN POSTMAN.

HOW THE LETTERS COME.

WHEN we take a letter to the post in London, how does it get to the friend who lives in the north of England, or in France?

It slips through the hole in which we put it into a box, called the receiving-box. There it stays till the mail-cart comes round, and then it is put into the cart with the other letters, and taken to the General Post Office in London. Here all the letters are sorted, and if it is to go to the north

of England, it is sent there by train. There is one carriage in which all the letters are put, and the clerks sort and arrange them according to their directions as they go along. Suppose it is to go to Carlisle: when the train stops at Carlisle, the letters are thrown out in bags, and taken by the mail-cart to the post-office there. Then they are given to the postman, and he takes them round from door to door. If the letter you put into the London post-office is to go to France, it is sent to Dover by train, and then it goes from Dover to Calais in the boat.

But why do we call it "taking a letter to the post?"

Because, in olden times, long before there were any trains or mail-carts, there used to be posts or stations at regular distances, where the king's messenger could procure fresh horses, or some one to carry his message.

Among the Arab tribes in the East, the postmen cross the deserts on camels. I will tell you something about camels by-and-by. In the picture you see an Arab postman with his letter-bag at his side. In his hand he has a long lance; this is to defend himself from the attacks of robbers.

We read about posts in the Bible, so the institution is a very old one. In Jeremiah li. 31 this is written:—"One post shall run to meet another . . . to show the king of Babylon that his city is taken at one end;" and in Job ix. 25—"Now my days are swifter than a post." The Jews, being the best educated nation, had posts earlier than others. Young men used to run on foot, and deliver despatches to a fresh person at each station. One of the kings of Rome improved this, and thought it would be a better plan to have horses and chariots. In Japan they carry letters in the old style. Young men run on foot with them, and dash along at a great rate. Indian letter-carriers trot all the way, with the letters packed in tin cases on their heads. They carry a stick with an iron ruler at one end, to which several loose plates of iron are fastened; this makes a rattle to frighten away the adders. Two or three men run before and behind with torches to drive off the wild beasts.

TWO BEAUTIFUL SIGHTS.

Do you think there is nothing beautiful in those cold Arctic regions where there is so much ice and snow? Oh, that would be a great mistake; there are many beautiful sights to be seen there which we cannot see in England. Still, I am sure you would not like to live there; for, if you did, you would not see much sun in the winter time. The sun does not appear at all for many weeks; it does not seem to rise.

Now I will tell you something else that is quite as strange.

For many weeks in the summer the sun is always to be seen, even at night; it never seems to set.

Now you shall hear of two beautiful sights which may at times be seen faintly in England, but which those who go to the Arctic seas have fully described to us. The one is best seen in the winter nights; the other is only seen in the summer nights.

Now, fancy that the sun is gone—it is night—the stars are glimmering, and just give light enough to show you that the earth is all covered with snow. Suddenly you see a broad, clear bow of light; for several hours, perhaps, this bow waves to and fro. Then the most beautiful coloured lights appear, and seem to dance about in the sky. Perhaps fireworks may give you the best idea of them, but they are much more beautiful than any fireworks.

The streams of light become brighter and brighter, darting through the sky, and forming themselves into a magnificent crown of light. The colours of these lights are most lovely—red at the base, green in the middle, and yellow towards the top. If you look at the earth, you see the icy mountains, and the snowy plains; and the sea is black as jet. Must it not be very beautiful?

Now about the other grand sight, to be seen on summer nights—what is it?



THE AURORA BOREALIS AND THE ICEBERGS.

Remember the sun is shining, though it is night. It is shining on icebergs, and making them look as if they were on fire. They sparkle and look as brilliant as if they were made of rubies and gold. Other icebergs, perhaps, look as if they were made of pearls and opal, changing colour every minute; and the water is a rich green, with here and there a streak of blue.

Oh, how very grand it must look!





ENGLISH COUNTRY-HOUSE IN WINTER,

HOUSES.

How many different kinds of houses there are! There is the English house made of brick or stone, which we English people think the most comfortable of all. Then there is the American wigwam, the Esquimaux snow-hut, the Canadian log-house, the Indian bungalow, the Irish mud-cabin, and many others. In Canton there are wooden houses that float on the water like arks, and in Siam also there are floating houses.

Where is Canton, and where is Siam?

They are both in Asia. Canton is in China. I will show them to



WIGWAMS OF THE AMERICAN INDIANS.

you on the map. Now I am going to tell you about tree-houses, or rather houses built on the tops of trees. These houses are built by the natives of Ysabel Island. This is one of the islands in the Pacific, one of a group called Solomon Isles, in the Melanesian Sea. You remember what I told you about the Melanesian Islands, and the two good bishops. One of these, Bishop Patteson, has written a letter, describing a visit he paid to the island, and it is from his letter that my account is taken.

These houses are built up in immense trees, at a great height from the ground, and almost always on the edge of some precipiee. They are so built for defence against sudden attacks. The villagers rush up the ladders, made of creepers twisted into ropes, and bamboo rounds, and from their high castles push down stones and spears, so as to prevent the enemy from going near the tree to burn it or cut it down.

They choose trees which grow with a straight stem to a great height, with very few leaves. The houses are built, as it were, on the head of the trees, which throw out two or three branches at the top. They make these tree-nests very comfortable and thatch them well. The natives are very clever in running up and down the ladder without holding any rope, and even the women go up and carry loads without turning at all dizzy. If they were to fall, they must be killed.

Dr. Livingstone, a famous traveller in the interior of Africa, tells of people there who live in houses under ground. The caves beneath the earth are many miles long, and have running rills in them. Dr. Livingstone did not go to see these caves. He says the people are dark and well made, and they adorn the walls with drawings of animals.*

Letter from Dr. Livingstone, dated July, 1868.



ATTACKED BY WHITE BEARS.

BARENTZ.

WILLIAM BARENTZ was a Dutch seaman—a very brave man, who was the leader of an expedition into the Northern Seas. This was nearly three hundred years ago. Three large ships were sent out with him. Two of the ships got back safely to Holland with their commanders before the winter came on, but the ship in which Barentz commanded was surrounded by ice, and he and his men were obliged to spend the long, dreary winter in a dreadfully cold and desolate place, called Nova Zembla.

Happily, a quantity of driftwood was found on the strand—that is, wood which has been drifted by the sea to the spot where it is found—and with this they built a hut and made fires to warm themselves. They were very thankful for this driftwood, because without it they must have died from cold. One of the men did die, and the ground was frozen so hard that they could not dig a grave for him, and their fingers were so cramped with cold that they could scarcely go on building the hut.

They were in great danger, too, from the white bears. One day Barentz, who was standing on the deck of his vessel, saw three bears silly creeping towards a party of his men who were working at the hut. He shouted to them to take care, and the men, seeing the bears, were very much frightened and ran away. One of the party, in his hurry, fell into a hole in the ice; but, fortunately, the bears did not notice him, or they would soon have eaten him up. They followed the other men, who ran as quickly as possible till they got to the ship, and then they thought they should be quite safe. But what was their horror to find that the bears, not at all discouraged, were getting up the side of the ship, determined to have a good meal!

The poor men could not light their matches, so the muskets were of no use, and they could only keep off the bears by pelting them with anything that came to hand. At last the largest bear got a severe blow on his snout, which made him sneak away, and his two companions followed him.

How thankful the poor men must have been to see them gol Did Barentz and his companions ever get back to Holland?

Many of the men did, but I am sorry to say that Barentz died on his way home. He was full of kind thought for the safety of his companions, and his last words were directions as to how they must steer the ship. They were all very sorry to lose their brave and kind commander, but they hoped he had gone to a better land, where there is "no more sea."



THE ALBATROSS.

THERE is a large and wonderful bird called the Wandering Albatross. It is a sea-bird, and can sail for days together above the surface of the water without stopping, swaying itself from side to side, and scarcely ever flapping its wings.

It is very fond of following ships, hoping to obtain food from the sailors. It is a very greedy bird, and swallows immense pieces of blubber which the men sometimes throw to it.

What is blubber?

The fat of whales. It is a great amusement to the voyagers in the Southern Seas to angle for the albatross, and they tempt it by putting the blubber on a hook. The albatross makes its home on the tops of very high mountains and rocks near the sea, where it is piercingly cold.

A gentleman who once visited their nesting-places says they lay but one egg, and make a kind of nest by scraping the earth round it, and so building a sort of circular wall. The birds were so busy they did not mind him in the least, but went on with their work without taking any notice of him. When, however, he went near the nest, they snapped their bills, to show that they were angry at the liberty he had taken. It is very seldom that any living creature but themselves comes near their homes. Their feathers are black and white.



SEA-HIRDS





SEA-WEED, CORAL, AND MOLLUSKS.

IF you have never seen sea-weed, I must tell you that it is the name given to some beautiful plants which grow on rocks under the sea. These plants have no flowers, but they have very pretty leaves or fronds, of different colours—red, green, and olive. In stormy weather the great waves dash against the rocks, and tear away bits of sea-weed, which are found on the beach when the sea goes out. But these sea-plants do not grow under every part of the sea. There are some large forests of them, as there are forests of trees on the land; and there are sandy plains under the sea where no plants grow, just as there are sandy deserts in Arabia and Africa. I cannot describe to you the different kinds of sea-weed; some day I hope you will go to the sea-side and pick them up for yourself. Some kinds of sea-weed are useful as well as pretty. Some of it is eaten by the people in Iceland, and in Scotland, and other places; and cows

and sheep are fond of it. It is used also as a medicine. There is a sea-bird with a very long name, which makes its nest of sea-weed. You will be surprised to hear that these birds'-nests are considered very delicious food, and the Chinese pay high prices for them.

One thing more I will tell you about these plants which grow in the sea. They do not get nourishment from the soil as land-plants do. They get all their nourishment from the water which surrounds them. The only use of their roots is to hold them fast on to the rocks and stones.

There are other wonderful things to be found in the sea besides sca-weeds. There are coral islands, built by tiny animals. This coral looks like a plant, and is called a "polyp."

Do the red coral beads come out of the sea, and are they made by these little animals?

Yes; but they are not made in that shape. I will show you a piece of coral in its natural shape. A great many people in Naples find employment in cutting and boring the beads. There's red coral and white coral; the red comes from the Mediterranean Sea.

You remember what I told you about the waters of that sea? What colour are they?

Blue.

I am glad that you try to remember what I tell you. When you go to the sea-side, you will find many shells lying on the beach. They were once the homes of little shell-fish or mollusks. Now they are empty. The poor little creatures have died, or have been eaten by some greedy fish, and their pretty little houses are thrown on the shore. I have used two very hard words to-day—polyp and mollusk. Remember that a polyp is an animal, of which the mouth, with its feelers, has some likeness to a flower, such as the daisy. A mollusk is a shell-fish.

Salangana. It is also called the Java Swallow.
 † There is also black coral, but this is rare.



FRIGHTENING THE LOCUSTS. SOMETHING ABOUT ALGIERS.

I HAVE told you that the swallows do not like our cold English winters. They fly away in the autumn to a warmer climate.

Where do they go?

Many of them fly to a warm and lovely country in the north of Africa. I will show it to you on the map. It is called Algeria.

A lady called Miss Edwards thought she would like to spend "a winter with the swallows" in that pretty land, so she went in a ship across the Mediterranean — the blue inland sea which I have often told you about. When she came home she wrote a book, describing some of the things she had seen. I have read the book, and I will tell you something about it.

Miss Edwards and her friends landed at Algiers. It is a beautiful town on a steep ascent by the sea-side.

What is a steep ascent?

A very straight, high hill, difficult to climb. The town has narrow streets. The houses are built so closely as almost to meet overhead. One sees there people of many different nations, dressed in different ways, according to the costume of their country. There are grave old Moors with handsome silk turbans, Turks in brilliant suits of violet or brown merino, Biskrans from the desert with loose vests of gay patchwork, Jews in black drawers and blue stockings, and negroes in light colours, with a flower stuck behind each ear, besides plenty of French people and other Europeans.

The Christmas Day this lady spent in Algiers was very different from a Christmas Day in England. The air was quite warm and scented with violets; the sky had not a cloud; the blue sea was calm and clear; all the windows stood open. The palm trees looked very pretty with their feathery leaves against a bright blue sky.

There is a place you would like to see near Algiers; it is called Blidah. It is a little town at the foot of some very high mountains, and it has the most beautiful groves of orange-trees all round it. There are oranges of all sizes, and, mingled with the fruit, lovely orange-blossoms, making the air sweet. The ground is heaped with fruit, and a nan, to whom some of the trees belonged, said he had to sell his oranges for three-halfpence a hundred!

Oh, would you not like to run about in the orange groves? There are most rare flowers, too, in this part of Africa, and other fruits besides oranges. There are figs, melons, olives, dates, and bananas. Yet I do not think you would like to live there.

There are two reasons why I think you would prefer to live in England.

The first is, that they have sometimes dreadful earthquakes in Algiers and the country round about.

An earthquake is a shaking or trembling of the earth, which causes houses to fall, by which many people are often killed.

But there is still another trouble which the people in that pleasant land have to bear sometimes. This is a plague of locusts.

What are locusts?

They look like immense grasshoppers, with yellow and green bodies as long and thick as a lady's finger. These creatures come in millions and darken all the air. It is like a black hailstorm.

What are millions?

A very, very great number, so great that you cannot count them. If you fill a cup with sand, or salt, you cannot count the grains, and I am sure you could not count the locusts.

The people are very sorry to see them, for they settle on the fields, and eat up all the corn, and potatoes, and peas, and vegetables. The men, women, and children run out of their houses, and shout, scream, beat kettles and frying-pans with sticks and stones, fire guns, and wave handkerchiefs, to try and frighten them away.

The man in the picture is running and shouting to frighten away a cloud of these insects, which you see are about to settle on his corn.



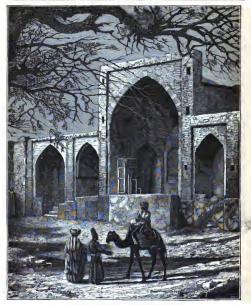


CEDAR FOREST OF TENIET-EL-HAAD.

AN ARAB FAMILY,

AND A VISIT TO THE CEDAR FOREST OF TENIET-EL-HAAD.

WOULD you like to hear more of what Miss Edwards saw in Algiers? I must tell you that a lady was with her, who was an artist, and made pictures of the country and the people.



ENTRANCE TO AN ARABIAN MOSQUE.

About five minutes' walk from the house where these ladies' were staying, there lived a poor Arab family, and they often walked across the fields to visit them. There were four little children, who looked very pretty in their coloured caps and full cotton trousers of pink or yellow. They used to dress themselves out with chains of wild flowers, yellow marigolds, and scarlet berries; and the bright flowers looked so pretty on their brown skins. The names of these little things were Zorah, Fatima, Hanyfa, and Ayesha. The artist lady wanted to draw their likenesses, and used to give them money to come and stand still to be drawn; but the little things would never come, unless they were very hungry and wanted money to buy food; and when tired of the business, they would make grimaces, and wriggle about like earwigs under a glass.

Now I will tell you about a journey to a cedar forest. The cedar is a noble tree. How grand a forest of cedars must look! One fine spring morning, Miss Edwards, with four friends, started off from Blidah to the cedar forest of Teniet-el-Haad; it was a journey of 150 miles. They went in a car, and they found the wind so very cold that they brought out all their wraps, and drew the curtains of the car as close as they could. Oh, it was so cold! They were glad to get to a little town perched between two mountains. They got out at the inn, and warmed themselves at a blazing wood fire, and there they had dinner.

They stayed a day or two at the inn, and then went on with their journey. At last they got to the cedar forest. It was very grand indeed, but the snow soon began to fall, and there was quite a heavy storm. The wind shrieked and moaned among the trees, and blew many of them down, and the snow-flakes fell thicker and thicker on the branches. How beautiful the forest must have looked! But the party could not go on. They had their dinner—hard-boiled eggs, bread, and wine—standing on boards, and shifting from one foot to another to keep themselves warm. They were very sorry to turn back, but were obliged to do so, and they got to the village of Teniet just as it was growing dusk.

A kind lady and gentleman there gave them a better dinner than they

had had in the forest, and—what must have been a greater comfort still—a good fire. They were wet to the skin, their cheeks tingled from the wind, and their limbs ached with cold. They stayed a few days at Teniet, for the snow continued to fall.

One morning the weather changed, the sun shone, and everything was beautiful. Then they went again to the cedar forest, and made a pic-nic to one of the prettiest parts of it. They had been told, however, not to stay after four o'clock, because many panthers live in the forest; so just as the sun was setting and it looked most beautiful, they were obliged to leave. They were sorry to miss seeing the sun set.



ALGERIAN ARABS.



MONKEYS IN A CORN-FIELD.

THE BABY OURANG-OUTANG.

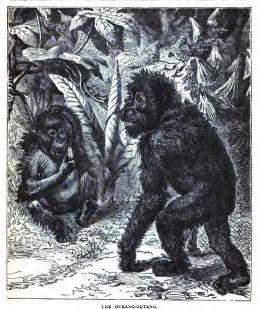
I AM going to tell you a true story about a little baby Ourang-outang. An ourang-outang is a kind of monkey. A gentleman named Mr. Wallace, who is very fond of birds and butterflies, went a long way to look for some new ones. If you will bring me a map, I will show you where he went. He went to some islands called the Moluccas, in the Malay Archipelago, south-east of Asia. There he found hundreds and thousands of new kinds of butterflies and lovely birds of Paradise.

And he found also, one day, a large ourang-outang up in a tall tree. He shot it, and killed it; and then he found a little one with its face downwards in the bog. It had been hanging to its mother when she fell, but it did not seem to be wounded.

While Mr. Wallace was carrying it home, it got its hands into his beard, and held it so tightly that he found it very hard work to get free. At that time it had not a single tooth, but it cut two teeth a few days afterwards.

The gentleman had no milk to give it, as the Malays and Dyaks never use milk. He gave it rice-water from a bottle with a quill, and the little creature soon learned to suck it very well. Sometimes a little sugar and cocoa-nut milk were added to it. This small ourang-outang was very like a real little baby, for when handled and nursed it seemed always happy, but when laid down by itself it would cry. The gentleman made a little cradle for it, with a soft mat to lie upon, which was changed and washed every day.

Mr. Wallace took a great deal of trouble with his little adopted baby. He used to carry it to the spout and wash it; the little thing made ridiculous wry faces while the water was running over its head, but it enjoyed being rubbed dry, and having its hair brushed. It liked to get hold of a bit of stick or rag, and sometimes, for want of something else to hold, it would seize its own feet, and after a time it would cross its arms, and grasp its own long hair. Mr. Wallace was so kind, he made a little ladder for it to take exercise on. He also made a pretended mother for it, by wrapping up a piece of buffalo-skin in a bundle. This reminded the poor little thing of its lost mother, and it tried to suck. But one day it got some wool into its mouth and nearly choked itself, so the pretended mother was taken to pieces again. After the first week Mr. Wallace fed it with a spoon, and gave it more solid food. It liked well-soaked biscuit mixed with egg and sugar, and it was very fond of potatoes.



It was most amusing to watch the little creature's way of showing that it liked its food. When it had a very nice bit, it would lick its lips, draw in its cheeks, and turn up its eyes with great satisfaction. But when it did not like what was given to it, it would push it all out between its lips, and if the same food were offered again it would set up a scream, and kick about violently, like a baby in a passion.

Mr. Wallace put a young hare-lip monkey in the same box with the ourang-outang, and they became great friends. The monkey, though it was full-grown, was much smaller than its young companion. It would sit on the ourang-outang's stomach or on its face, and when the big baby was being fed, the little grown-up monkey would sit by, pick up all that was spilt, and when the meal was finished it would pick off what was left sticking to its baby friend's lips, and open its mouth to see if any remained inside. The ourang-outang loved the monkey, and used to clasp it affectionately in its arms.

When the poor little ourang-outang was three months old, it became very ill and died.



THE BABY OURANG-OUTANG.



PREPARING COD FOR THE MARKET.

THE COD-FISHERY IN NEWFOUNDLAND.

NEWFOUNDLAND is an island in the Atlantic Ocean, near the eastern coast of North America.

What is an island?

A piece of land with sea all round it.

Now I will show you Newfoundland in the map. It belongs to Britain—that is, our Queen Victoria rules over it. It has high, rocky shores, jagged and torn. The broad, deep bays run up from forty to sixty miles into the body of the island. The lands near the sea are very bleak and rugged, without trees or bushes, but near the mouth of the rivers there are trees. The island is very cold in winter, but pleasant in summer. There are plenty of deer and foxes in it.

The people who live in it spend most of their time in fishing. They take seals in spring, and cod in summer; also salmon, herrings, and mackerel. The millions of cod which come into these seas are accompanied by millions upon millions of cuttle-fish, called in Newfoundland "squids." The fishermen catch these squids to serve as a bait for capturing the cod.

When spring comes, about two thousand ships go out from England, with thirty thousand men, across the Atlantic to Newfoundland, on purpose to bring back the cod. Still more ships are sent from America, and the French send out a good many.

The fish is salted and dried before it is put in the barrels. In the large picture on the next page you will see the fishermen busy, and in that on the previous page they are drying and preparing the fish for the market.

You have, perhaps, heard of cod-liver oil, and know that it is useful as a medicine. The oil is not nice, but the cod itself is a very nice fish. I dare say you have sometimes eaten it.

A good fisherman can sometimes haul up four hundred cod in a single day, one after another, with his line. It is not very easy work, for they are large, heavy fish.

Why is this island called Newfoundland?

A merchant, who lived at Bristol, in England, went on a voyage of discovery, and finding this island, he gave it the name of Newfoundland. It is not a right name, for some Norwegians who sailed from Greenland had found it out long before; but people had forgotten it, till this merchant made the discovery again.



COD-FISHING ON THE COAST OF NEWFOUNDLAND.

What was the name of the merchant?

John Cabot. He was not an Englishman, though he lived in England. He was born in Venice. He had a son called Sebastian, who was as fond of sailing about and making discoveries as he was himself.



THE OSTRICH.

THE ostrich is the tallest of birds; it is taller than a man. It has a very long neck, and long legs, and skims over the ground at a wonderful pace, almost as fast as a railway train. It lives in the hot, sandy deserts of Africa. When it runs, its feet seem scarcely to touch the ground, and its wings, which are too weak and small for flying, help, by their flapping, to carry it over the plain.

How long do ostriches live?

From twenty to thirty years in their wild state. Sometimes they are tamed. Ostriches have been made so tame, that they have carried little boys on their backs. Must not that be a funny sight to see? Ostriches are able to eat almost anything one may like to offer them. I have heard of an ostrich snatching a key out of an old womans hand and swallowing it. Poor woman! it was the key of her house, which she had locked up on purpose to go and look at the ostrich. A gentleman, who had a tame ostrich, used every evening to give him his newspaper to swallow. It is astonishing to see them gobble down stones, bits of wood, iron, or anything else one may choose to give them.

Do ostriches sing?

No; they do not sing, but they make a noise like the roar of a lion. What do they eat in the desert?

They feed on wild melons. They live in flocks. They put their eggs in a hole in the sand, so that they may be hatched by the heat of the sun. The egg is immense; it is equal to twenty-four hens' eggs, such as we eat at breakfast. Yet sometimes a man will eat one at a meal. The shell of the egg is very useful. It is sometimes chipped into spoons and ladles, but more often it is used as a vessel for carrying water, the hole at the top being stuffed with grass. You have seen the ostrich feathers which the ladies wear in their hats and bonnets; they are very beautiful.

The African savages hunt the ostrich for the sake of its feathers; they have different ways of hunting them. Some hunters on swift horses give fair



AN OSTRICH.

chase to the birds; others scrape a hole in the sand near their nests. There they lie and watch till the ostriches come to their eggs, and then they shoot them with poisoned arrows. Sometimes a hunter will dress himself up in the skin of an ostrich, and thus get among a flock. Then he shoots one after the other without any difficulty.

Which way of hunting would you like best?



RIDING THE OSTRICH.



SPEARING THE HALIBUT.

THE ESQUIMAUX.

In the most desolate, cold, and dreary regions of the earth, far, far away to the north, live a race of men called Esquimaux. There are tribes of these people all over the coasts of Arctic America, which I will show you on the map. The native Greenlanders about whom I have told you are Esquimaux, but they differ in some respects from their American relations, though they are like them in face and figure. I am going now to tell you about the American Esquimaux.

These do not build their huts of stone, as the Greenlanders do, but they make the most beautiful little houses of snow. They make the table, the beds, and the seats all of snow too; they cover them with skins, and make them so comfortable. Oh, it is such a snug hut, and so pretty!

But can they have a fire in their hut?

No, that would soon spoil it; but they do not want a fire. The master dries his wet clothes and boots by a train-oil lamp, when he comes home from hunting, and as he and his family like raw flesh and fat, there is no trouble in cooking the dinner.

But how can they keep themselves warm?

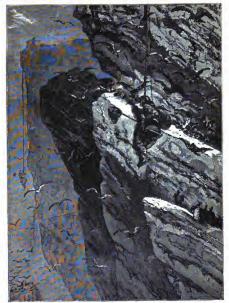
The number of people in each hut warms the air, and they wear a dress of double seal-skin, which keeps the cold out nicely; and, above all, they take plenty of exercise. That is the best way to keep warm.

What do they live on?

They cannot have bread, for corn would not grow there. The rough winds of the Polar Sea blow over their part of the world, so that scarcely anything green can grow. Yet, in some sheltered places, you may find a few mosses, grasses, and willows. They cannot have meat, for there is no food for cows, sheep, or pigs. The sea supplies them with food, and they all live near the sea, or else they would starve. Now I must describe to you what they are like, and by-and-by I will tell you about their curious boats, and the way they live, how they spend their time, and how their little children amuse themselves.

The Esquimaux are short (especially the women), broad-shouldered, with remarkably small and well-formed hands and feet. They are strong, and the men can wrestle well. Their faces are broad and flat. They do not like to wash themselves, so they are covered with smoke and dirt, but the colour of their skin is brown. The women plait their straight, black, glossy hair, and tattoo their chin, forehead, and cheeks—that is, they draw a pattern on their faces with a sharp-pointed instrument, which is dipped in some kind of dye, so that the pattern remains.

Does it hurt them very much?



CATCHING BIRDS AND GATHERING EGGS.

Yes, indeed it does; but it is considered an honour to be tattooed. Perhaps they think it improves their appearance. The men are tattooed to make them look terrible in battle, and to teach them to endure pain. But it is a bad and silly custom. Some of the men wear ornaments on their noses and lips. It must hurt them to pierce their noses and lips, to put these ornaments in; but do not English ladies wear ear-rings?

The Esquimaux are fond of beads, and they like to make a belt for the waist with the teeth of animals strung together.

MORE ABOUT THE ESQUIMAUX.

I PROMISED to tell you about the boat, or kayak, as it is called, which the Esquimaux use. They take a light, long, and narrow frame of wood, or sometimes the bone of a seal, and cover it tightly with seal-skin, making one round hole in the middle. In this the man sits, and strikes his light oar or paddle first to the right and then to the left, and seems to fly like an arrow over the water.

How is it the water does not get in through the opening?

It is quite filled up with a seal-skin sack, which the man binds round his body, so that not a drop of water can get through. In these kayaks or canoes the Esquimaux set off to spear the halibut or catch the whale. In the picture on page 120 you see them in their canoes spearing the halibut; they are very dexterous in throwing this spear, and seldom nilss their aim. As each canoe only holds one man, a dozen canoes or more may be seen paddling together when they want to catch a whale. They drive their spears into the poor animal many times before he is quite killed, and sometimes chase him for half the day, spearing him when they can get opportunity to do so. At last he is quite exhausted by loss of blood, and cannot escape his pursuers any more. They catch scals all the year round, but the great hunt takes place in spring, when they come out on the ice to bask in the sun.

Thus the Esquimaux spend their time. In the spring they hunt the reindeer, and spear the 'salmon and halibut. In the summer the penguins and other sea-fowl supply them with food. These sea-fowl build their nests on the sides of the cliffs, and to get at them the Esquimaux make a kind of chair, which is fixed to the end of a long seal-skin rope: one man gets into this chair, and is lowered down the sides of the cliffs so as to enable him to reach the nests. In the autumn they give themselves up entirely to whale-catching. They are wonderfully ingenious and clever in making their fishing and hunting implements.

Now you will like to hear about their children. You will be surprised when I tell you that the women often carry their little children about in their hoods or their boots. It reminds you of the story of the old woman who lived in a shoe. Well, you know that is not a true story, but it is true that little Esquimaux children often spend a good deal of their time in their mothers boots. And they are very comfortable too—the boot is made of seal-skin, and lined with the downy skins of birds. It is very high and loose. There is an inner and an outer boot, and it forms quite a comfortable nest for the little one. The Esquimaux are very kind to their children, and they are generally very good and teachable.



HUNTING THE REINDERS.



HIPPOPOTAMI IN THE ZOOLOGICAL GARDENS,

THE HIPPOPOTAMUS.

THE hippopotamus is only found in Africa. It lives in rivers, but it sometimes comes on land, and does a great deal of mischief. There are immense numbers of them in the Nile and the Niger and other rivers of Africa. It only comes on land at night. Then, when the poor farmers are asleep, this great mischievous creature sallies out to the fields and spoils the crops, treading them down with its great broad foot, and devouring them as fast as possible. Unfortunately, it has an enormous appetite, and is not easily satisfied. As soon as day comes, it makes off to its hiding-place among the river-banks and thick reeds.

Its skin, which is very thick, is used for all kinds of purposes, especially for making terrible whips called "cow-hides," which are used for keeping the poor slaves and oxen in order.

There are two of these animals in the Zoological Gardens in London—some day I hope you will see them. The elder of the two is the first that has ever visited England. He was caught when he was very young, by order of the Pasha of Egypt, and sent over as a present to our Queen Victoria. Two cows and three goats were taken on board to supply him with milk, for he would take no other food, and he refused even this, if it was not very fresh. It seems strange that such a large, coarse-looking animal should be so dainty, but so it was. Now he is fed on hay, corn, vegetables, and some food that is prepared purposely for him. When he first came over to England he was very amiable and playful, and liked to go to sleep with his neck resting on the feet of his keeper; but now he has grown very morose, and is, at times, quite furious. Perhaps confinement has soured his temper.

In the Bible the hippopotamus is spoken of under the name behemoth.





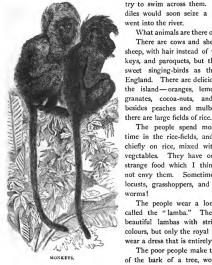
TOWN IN MADAGASCAR.

MADAGASCAR.

THIS is a village in Madagascar. The houses are made of wood or clay, and the roof is thatched with rushes.

Where is Madagascar?

It is a very large island near the coast of Africa. There are not many people in this island, not so many as there are in England; yet see how much larger Madagascar is than England. It is a very beautiful country too. There are thick forests, high mountains, and fine rivers. There are huge creatures called crocodiles in the rivers, and it would be very dangerous to



try to swim across them. The crocodiles would soon seize a man, if he went into the river.

What animals are there on the land? There are cows and sheep (curious sheep, with hair instead of wool), monkeys, and paroquets, but there are no sweet singing-birds as there are in England. There are delicious fruits in the island-oranges, lemons, pomegranates, cocoa-nuts, and bananas, besides peaches and mulberries-and

The people spend most of their time in the rice-fields, and they live chiefly on rice, mixed with meat or vegetables. They have one kind of strange food which I think you will not envy them. Sometimes they eat locusts, grasshoppers, and even silkwormst

The people wear a long garment called the "lamba" The rich wear beautiful lambas with stripes of all colours, but only the royal family may wear a dress that is entirely scarlet.

The poor people make their clothes of the bark of a tree, woven into a kind of matting. They get up very

early in the morning and go to their work in the rice-fields. In the evening they amuse themselves with dancing and singing till it is time to go to rest.

Are the people in Madagascar Christians?

Yes, I think I may say that Madagascar is now a Christian country. There are many churches and clergymen there, and we hope that soon all who wish to hear and read God's Word will have an opportunity of doing so. Yet forty or fifty years ago the people of Madagascar had never heard the name of Christ. When you are older, you will read an interesting account of this mission. The first missionaries who went to Madagascar, and the first Christians who professed the faith there, had much to suffer, and at one time the missionaries were sent out of the island. But the work was of God, and he gave it his blessing, so it prospered.



HUNTING THE CROCODILE.



FRANSPLANTING RICE.

JAPAN

THERE are some islands very near Asia on the eastern side, called the Japan Isles.

Very little was known about the people who live in Japan until quite lately, for the Japanese did not allow strangers to land in their country, and their own people were forbidden to travel. But now English people may go to Japan, and the Japanese may come to England to trade; for a treaty has been made between the two countries, and ships laden with useful things are sent from one to the other. We send out from England things which we have in abundance, and which the Japanese want, and we get in return things which do not grow in England. One thing is rice: there are rice-fields in Japan, and rice will not grow in England—it wants a warmer climate, and it likes very wet land.

An English lord, accompanied by his private secretary, paid a visit to Japan about twelve years ago, to make a treaty between the Queen of England and the Emperor of Japan, and Mr. Oliphant (the secretary) has written a very interesting account of his visit. I will tell you a few things which I have learnt from his book, and I hope in a few years you will be able to read it all yourself.

The Japanese were very kind and polite to their English visitors. They are an amiable, generous, and clever people, fond of reading and writing. They write in columns from the top to the bottom of the paper, beginning at the right-hand side. The Japanese words are very long, but they do not sound unmusical. The English gentleman could not buy any books, because the booksellers were forbidden to sell books to strangers.

Shall I tell you about their animals? They have horses, oxen, and cows; but they never drink milk, or make butter and cheese. They have very few pigs, and no sheep; but they live on poultry, venison, and fish. They drink sakee—a spirit made from rice. They are also very fond of sweetmeats, green tea, and a particular kind of sea-weed. They are wonderfully clean, and pride themselves on keeping their houses in a state of exquisite neatness. The mattings in the poorest houses are always perfectly clean, and their floors, and wooden cups and plates, are perpetually being scoured and polished.

The Japanese ladies are not shut up, as they are in some countries, but are allowed to go out and enjoy themselves. They are very fond of pleasure-parties on the inland lakes, which are numerous and shallow. Instead of going in boats they travel in a kind of chair borne upon the shoulders of stalwart coolies or porters, who wade through the water. Perhaps you would not like to travel in this manner, for fear of being upset; but an accident is very rare indeed, as the coolies are held responsible for the safety of their passenger, and would be severely punished if they upset them.

Lord Elgin, the English nobleman who went to Japan, invited the Governor of Limoda to luncheon with him. The Governor liked the English food, and after luncheon he took some of the choicest dainties that were left, and wrapped them up in little square pieces of paper, to take home to his children. He carried the little square packets in the folds of his shirt.

Many of his followers did the same thing. It is considered good manners in Japan to take away what is left of the food, but in England it would be thought very rude.



JAPANESE LADIES ON THE WATER.

There are two kinds of palanquins or carriages used in Japan; one is called a "norimon," and is used by people of rank. This is carried by four men. The other is a rather uncomfortable sort of basket, carried by two men.

There are many very beautiful things in the bazaars at Japan; curious things, such as are never seen in England. What do you think of a water-proof greatcoat made of waxed paper? Mr. Oliphant bought one of these; it cost only eighteenpence, and he found it very useful to keep off the rain,



but a little liable to tear. There are also paper umbrellas. The Japanese shoes are all made of straw; they cannot be worn very long, but when the old ones are done with a new pair is bought, and I dare say they are not very dear.

The amusements of the children of Japan are much the same as in European countries; one of their chief is kite-flying. Kites are to be had of all sizes and shapes, from a little one, six inches square, to one almost as big as a house. Sometimes the sky is almost hidden by the number of kites soaring above in the shape of eagles, swans, warriors, and dragons, while the air is filled with a humming sound they make.

On page 133 you see a number of Japanese children at play; some are flying kites, others playing at battledore and shuttlecock (also a favourite amusement with them), whilst blind-man's buff, marbles, tops, ride-a-cock horse, and a host of other games such as you play are being indulged in. Do you notice how curious they look in their costumes?

They wear no hats or covering to their heads, and their hair is only allowed to grow in three or four patches. These little fellows you see are in the water, amusing themselves by catching young crabs and small fishes among the rocks. I dare say their mammas would be very angry with them if they knew they were in the water.



JAPANESE HOUSES AND AN EVENING ENTERTAINMENT DESCRIBED.

I WILL tell you a little about the houses in Japan. They have very little furniture, and there is much less difference between the houses of the rich and the poor than there is in England. They are all, as I have told you before. scrupulously clean; and there are very few ornaments even in the best houses-only, perhaps, a handsome screen, or some carved panels, buildings themselves are very flimsy, and there are two curious things about them-they are made partly of paper, and the roof is built first. When the roof is finished, it is raised and placed on its supports; two of the sides are then boarded in, and the other two are closed by means of sliding screens of paper. Those intended for windows are made of paper, thin and transparent enough to let the light through. The floors are raised a foot above the ground, and covered with fine matting, which is always so clean, that no one likes to step on it without first taking off his shoes. These houses do not keep out the cold very well; but in winter the people wrap themselves up in warm quilts, and sit round a charcoal-burner which is in the middle of the room. The paper in Japan, which is put to such curious uses, is less tearable and more woolly than that we have in England; that used for windows, umbrellas, and greatcoats, is oiled.

You will like to hear about a Japanese entertainment to which some English officers were invited.

The rooms were brilliantly lighted with paper lanterns. There was no furniture in them; but carpets were spread, on which to sit in Turkish fashion. There were so many courses that the dinner took about five hours. There were about fifteen different kinds of soups—some of them made of sea-weed. The visitors could not, of course, taste even a little of everything, and were obliged to give up when some solid dishes—beef and fowls—were served up, in special compliment to the English. They would all have been very tired, if they had not had some amusement during this long dinner. Young girls came into the room, and danced very prettilly, while other girls played the

guitar. After a time the dancers went away, and some singers came and sang in the Japanese fashion, which is not very pleasant to English ears. They do not seem to have much taste for music in Japan, and the English visitors were glad when the singing was over.



INTERIOR OF A JAPANESE HOUSE.



ALFRED THE GREAT.

ALFRED THE GREAT.

THIS is the portrait of a good king who reigned over England about a thousand years ago. How different England and English people must have been then to what they are now! The houses were made of wood, and the windows were simply holes, covered with cloth or lattice-work to keep out

the wind, for glass was not then known in England. The people wore woollen clothes—some of the rich had also linen—but instead of the comfortable beds, blankets, and sheets we have now, they were satisfied to lie down on the floor, wrapped up in the skins of animals. They could till the ground, but they were not clever in those days in making things or in trading. A very few learned people knew how to read and write.

At twelve years old the young prince did not know how to read, but one day his mother, who must have been a very learned lady, showed him a book beautifully written and ornamented, and promised to give it to him when he could read it. He wished very much to possess this book, so he tried with all his heart to learn, and succeeded so well, that he was soon able to read it to his mother. I dare say she had even greater pleasure in giving him the book than he had in receiving it. The young scholar afterwards became one of the most learned men of his time.

During the first years of Alfred's reign, or rule, the Danes, who had got possession of a great part of the kingdom, were very troublesome, and refused to acknowledge him as their king. At one time he was even obliged to hide himself, in order to save his life. He dressed himself like a labourer, and offered his services to a cowherd in the country. One day, when he was in the kitchen mending his arrows, his master's wife, not knowing that Alfred was the king, told him to watch some cakes that were toasting by the fire. The king, who was perhaps thinking about the Danes, and how he could best drive them out of the country, quite forgot to turn the cakes at the right time, and they were all spoiled. When the mistress came back, she was vexed to see her cakes as black as the coals, and scolded Alfred for not attending to her wishes. It is said that when she found out he was the king, she was very much distressed at the rough words she had used to him. But he was too much of a man and too noble, to be angry with her. He tried to comfort her, and said, "If you will forgive me for spoiling your cakes, I will forgive you for your hasty words."

Did King Alfred drive out the Danes at last?

By degrees he collected an army, and, falling on them unexpectedly,



KING ALFRED SCOLDED FOR ALLOWING THE CAKES TO BURN.

gained a complete victory over them. But he did not kill the prisoners he had taken, or make slaves of them, or even drive them out of the country. He told them that if they would live peaceably and honestly, they might stay in England, and this they consented to do.

Then this wise king took pains to make good laws and to improve his subjects. He invited the skilful workmen of other countries to come over and teach his people all kinds of useful arts. He was especially anxious that they should learn to build good, strong ships, and sent for foreign shipbuilders to show them how to do so. The king was so persevering about this, that though the English were not very quick in learning, they got at last quite a large fleet—that means a large number of ships—to defend the country. After some years of peace, more Danes came over to attack our island, with a fleet of from two to three hundred ships, under the command of a famous leader called Hæsten. If our brave king had not made good use of those years when the country was left in peace, he must have given it up to the Danes now; but after a long struggle he at length conquered them. He took Hæsten's wife and sons prisoners, but released them on condition that the Danes should leave the country. This they did, and the last few years of Alfred's reign were prosperous and peaceable.

One thing more I will tell you about King Alfred. He was very careful to waste no time, and as there were no clocks in those days, he devised a way of measuring time by burning wax candles. These candles were painted in rings of different colours, so he always knew, by the state of his candle, what the time was. When the wind blew on them they burnt faster, so he invented lanterns to shelter them from the draught.





DEAD BEAT.

THE PEOPLE OF LAPLAND.

BEFORE I tell you anything about the little Lapps, open your map, and I will show you where they live. As their country is so far to the north, you will not be surprised to hear that it is a very cold one. The people are very short and stout, certainly not pretty. They have straight, dark hair; dark, piercing eyes; high cheek-bones; wide, pinched mouths, and flat noses.

Their poor eyes suffer dreadfully from the smoke of their huts and the dazding whiteness of the snow, so that they often become quite blind as they grow old. Their legs are thick and clumsy, but their hands are small and well-shaped. In summer they wear a kind of tunic made of coarse woollen cloth, reaching to the knees, and fastened round the waist with a girdle. They have woollen caps shaped like a Turkish fez, with a red tassel, and red worsted band round the rim, for they like gay colours. Their boots and shoes are made of the skin of the reindeer, with the hair outwards.

What do you think the Lapp wears instead of stockings? A kind of grass, which he cuts and dries. He rubs it in his hands, and then stuffs his shoes and gloves with it. It is a good plan, because this grass keeps the cold from his hands and feet in winter, while in summer it keeps off the heat.

During the cold part of the year the Lapps are so packed in skins, that they look more like bears than human beings. They travel over the snow in sledges drawn by reindeer, or with skates made in a peculiar way. These skates are very long strips of fir-wood, covered with the skin of the reindeer. With these a Laplander can fly so quickly over the snow, that he can overtake wild beasts, and—what is still better—can get out of their way, so as not to allow them to overtake him.

They chase the wolves over the hills and valleys, and kill all they can, for these animals are the greatest enemy the Laplander has. The man in the picture, on the next page, is attacked by a whole pack of them; but you see he is not afraid. He knows that when he fires his gun at them they will run away, so you see they are not very brave animals.

When the Lapps meet each other, instead of saying, "How do you do?" as we do, they say, "Is it peace?" which means, "Have the wolves molested you?" They suffer sadly from the attacks of these beasts, who come prowling about their herds and often kill their reindeer.

The sledge journeys must be very delightful to those who can bear the cold. The reindeer is so good a traveller, that he will often draw the sledge for fifty miles without stopping to take any refreshment, except to moisten



ATTACKED BY A PACK OF WOLVES,

his mouth with snow. In these excursions the reindeer and his master are often lighted by the beautiful aurora, which I have described to you.

What do the Lapps live on ?

In summer their chief food is cheese and milk, both from the reindeer; in winter they eat reindeer-flesh and drink the broth in which it is boiled.

Their huts are miserable affairs, made of earth, stones, and branches of trees. When a stranger arrives in any village, the Lapps come towards him, and offer him their very dirty hands to shake. Then they question him in this manner:—"Is peace in the land?" "How is the emperor, the bishop, and the captain?" After this they probably make some inquiries about the home of the stranger, and are sure to ask if tobacco grows in his land. You can guess from this question that the Lapps are very fond of smoking.



LAPLANDER IN WINTER



THE REINDEER.

THE REINDEER.

THE reindeer is as valuable to the Laplander as the camel is to the wandering Bedouin. It is not so elegant as other deer, but it is much more useful. Its legs are short and thick, its feet broad, and as well fitted for waiking over the snow, as the camel's for crossing the sandy desert. So God, in his goodness, has given to each animal just what he needs for the work he has to do, and in like manner he fits us for our work. If we try to be something different to that which God intended us to be, we are as ridiculous and pitiable to behold as a reindeer in the desert, or a camel in the snow.

The short legs and broad feet of the reindeer make it easier for it to swim, and this is very important in countries where there are so many lakes and rivers, and where the searcity of food renders it necessary to wander from place to place. The reindeer gives milk, which, though small in quantity, is thick and good and nourishing. It is like cream, and tastes very nice, but the butter made from it is bad. It makes good cheese, however, and this is the Laplander's principal food in summer. The reindeer is easily tamed, and soon learns to love its master, but it will not bear ill-treatment. When forced to drag too heavy a load, it has sometimes turned upon the man who has thus ill-used it, and attacked him with its horns and fore-feet. The man is then obliged to overturn the sledge, and hide under it till the animal's fury is lessened.

The only food of the reindeer during winter is moss, and it is surprising how he is able to discover it, hidden as it is beneath the snow. I suppose he has extraordinary powers of smelling. He thrusts his muzzle into the snow then begins making a hole with his fore-feet, and works at it till he uncovers the moss. And the wonderful thing is, that he never makes the hole without finding the moss. In summer he feeds on herbs and leaves of trees. It would be of no use to bring the reindeer to England, for he cannot live in a mild climate. He likes cold, and requires a bracing air, and would have no appetite for the food that we could give him. The moss that grows in his own country is the food he likes, and he prefers to wander about and find it for himself.

After the death of the reindeer, every part of his body is put to some use by the Laplanders. The flesh is eaten; the skin is made into clothing, tents, and bedding; spoons, knife-handles, and other useful things are made of the bones and horns. The skin is also made into gloves in Russia; it is very soft, but very dear.



A DOG-SLEDGE.

FOREIGN DOGS.

I HAVE told you a good deal about foreign men and women—that is, those who do not belong to our island. Would you like now to hear about the appearance, habits, and customs of dogs in other countries? Our English dogs are, in some respects, very unlike their brothers and sisters in other parts of the world, and lead very different lives. In some countries the poor dogs

are treated with great cruelty; in others, with great respect. I will tell you first about the poor hard-worked dogs who, though very useful to their masters, lead sad lives, and undergo many hardships; and then about the petted dogs, who are treated like spoiled children.

Look at the map of Asia. North-east of the map there is a piece of land nearly surrounded by water. It is called Kamschatka. It is a cold, bleak place, and a good deal of snow falls there in winter. The dogs in Kamschatka are most valuable. They live entirely on fish, which they catch very cleverly. From spring to autumn they are allowed to roam as they like—their masters take no trouble about them—but in October they are collected, bound to a post, and starved for a time to make them thin and better able to run. During the winter they are fed with dried fish every morning and evening, but while travelling they get nothing to eat, even if they run for hours. They are wonderfully strong. Five of them are generally harnessed to a sledge, and they can easily drag three full-grown people and a good deal of luggage besides, over bad roads and through deep snow. In the picture on the previous page you see five of them are harnessed to a sledge, but they are only drawing one man. See how fast they are running.

During a snow-storm the dogs keep their masters warm, by lying quietly near them for hours. The men have only to prevent the snow from covering them too deeply and suffocating them. The dogs show their masters, too, when a snow-storm is coming. They seem to know beforehand, and begin digging holes in the snow.

Sledge-dogs are trained very early. Soon after their birth they are placed with their mothers in a pit. Poor little things, it seems very hard upon them to allow them to see nothing of the world! After a time they are brought up, separated from their mothers, and in a few weeks put back in the pit quite alone. This makes them shy, and when, after six months of prison-life, they are fastened to a sledge with other dogs, they run extremely fast. On returning home they are again put in the pit, and not allowed their liberty till they are quite trained. This hard treatment sours their temper, as well it may, and the poor things always remain shy and quarrefsome. You



ESQUIMAUX DOGS.

remember what I told you about the Esquimaux? They also have dogs, which draw their sledges in winter. In summer they carry burdens in a kind of saddle-bag laid across their shoulders. They have short ears, a thick furry coat, and bushy tail, and look very much like the Esquimaux wolf. On the preceding page you see four of them are being harnessed. Their masters are severe with them, and never caress them as we do in England. Yet the dogs are very affectionate to their masters, and when they have been away from them for a short time, express the greatest delight at meeting them again. They jump up and lick their faces all over with pleasure.

I dare say you remember something about Japan: the people with their curious paper umbrellas and paper coats, their beautifully clean houses, and their sea-weed soup. Well, the chief city in Japan is called Yeddo, and this city is full of dogs. They wo k about the streets in large numbers, and are well taken care of, for these are the petted dogs which I promised to tell you about. The people in Japan would put a man to death if he dared to kill a dog. Indeed, the dogs there are much more respected and better treated than many poor people in England. There are hospitals for them, to which they are taken when they are ill, and a Japanese would sooner lose his own dinner than let a dog go without his food for a day. How different are the lives of these animals to those of the poor, half-starved dogs of Kamschatka! Yet those hard-working, much-enduring animals are far the noblest—are they not?





AN ARABIAN SHEEP.

FOREIGN SHEEP AND OXEN.

Do the oxen and sheep in other countries lead different lives to those of their English relations?

Yes; in Japan the cow is never milked. The Japanese seem to have great respect for animals, and perhaps they think it would not be treating the cow kindly to take her milk. The Egyptians used to honour the bull as a sacred animal, and it is now honoured in India in the same way. Men soon found out how useful the ox could be, and we read in the Bible about waggons drawn by oxen, and also about oxen drawing the plough.

in the Rocky Mountains of North America, and also in Siberia, there are large wild sheep, very active and strong. They can run up tremendous precipices in a wonderful manner, and can go over the most dangerous passes in safety. The Arabian sheep has a peculiar tail; it is very broad and large.

The Arabs fasten a little board, which goes on wheels, to the sheep, to carry its tail. Is not that a funny idea? If the poor sheep were to go out without its little carriage, its tail would drag on the hot, burning ground, and soon become blistered and torn. The fat tail of the Arabian sheep is considered very delicious, and is often eaten instead of butter. The people in Iceland have a curious way of shearing their sheep. Instead of cutting the wool as we do with shears, they tear it off the poor animal's back. It seems a cruel way of getting the wool, but they say that at one period of the year it can be easily torn off without pain. This is the way in which it is done: they throw the sheep on their backs, tie their legs, and then pull off their wool by main force. I think our English plan is much better, and I quite agree with the Japanese, that even animals ought to be treated with some politeness.





THE BANYAN TREE.

WONDERFUL TREES.

THERE is a tree called the Bread-fruit tree, which was first made known to us by Captain Cook, who found it at Otaheite. This tree is about the height of an oak, and its leaves are like those of the fig-tree. The fruit is as large as a child's head. When roasted it is soft, tender, and white, like the crumb of a loaf. It must be eaten new, or it becomes hard. Some say its taste is like that of a roasted potato. When cut in thin slices and dried, you might think it to be dried biscuit. This tree is very useful to the natives of the South-Sea Islands; the fruit supplies bread for the table, and they make their table itself from the trunk, and their cloth from the bark. They also use its wood for their canoes.

Not only is there a bread-tree—there is also a butter-tree. It grows in India and Africa, and bears pretty yellow flowers. These are succeeded by fruit about the size of a pigeon's egg, and inside the fruit are seeds, which, when pressed, yield a very nice kind of butter. This butter has one great advantage—that it will keep many months in the hot countries where it is found, without changing its colour or taste. These are very wonderful trees, are they not? I dare say you would like to taste the bread and the butter which grow on trees, and though they are not very different to our own bread and butter, you would enjoy the novelty, especially if you sat down to a table made of the same tree on which the bread grew, and covered with a bread-tree tablecloth. But you would still want milk, and if you must get your milk from the cow, the fun would be half spoiled. Suppose there is a cow-tree, as well as bread and butter trees! You can hardly believe it, but it is true, nevertheless.

The cow-tree grows in South America. When its trunk is pierced, a sweet and nourishing milk flows out, which the natives eatch in bowls.

Now, such an uncommon feast as this, made of tree bread and butter and milk, ought to be given in a tree-house. How many of your friends would you like to ask? Twenty or thirty? Do not be afraid that the tree-house will not hold them. It will hold more people than you ever saw in a church. It is a much more wonderful tree than the others of which I have been telling you. The name of this tree is the "banyan." It grows in India, and the Hindoos often worship under it. Indeed, it seems a most suitable place for prayer and praise, and is much larger than any cathedral that was ever built by man.

Every branch of the banyan throws out small fibres, which gradually grow downwards till they reach the earth. Then they strike into the ground, and take root, throwing out new branches from the top, which, in their turn, make new roots. In this manner the pillars of this wonderful tree-house are formed.

About a hundred years ago, a Hindoo chief took up his abode under a large banyan, and lived there for some months with a numerous train of

servants. He brought also many carriages, horses, and camels. The noble tree provided shelter for all. The chief had a goodly palace without the trouble of building—dining-room, drawing-room, bed-rooms, kitchen, and stables, all in separate tents; and, besides this, plenty of room to spare for the tents of his friends, with their servants and cattle.



THE BREAD-FRUIT.



BATTLE BETWEEN HERMIT CRABS.

THE HERMIT CRAB.

THE Hermit Crab is a curious little creature living in the sea; its head and claws are covered with shell, but its poor tail, which is as long as a lobster's, is left bare, with only a skin to cover it, except at the rip, on which there is a

little hard instrument like pincers. Having no shell of its own, the poor little thing is obliged to look out for a home. It is amusing to watch it wandering about on the beach in search of an empty shell. It looks first at one, then at another; and when it finds one quite to its mind, it takes up its abode in it, and makes itself at home.

The pincers at the end of its tail are very useful in holding it firmly to its shell.

A gentleman named Mr. Wood, whose books about animals I hope you will soon be able to read, once caught a hermit crab in a whelk-shell, and tried to pull him out; but the hermit stuck so close to the shell, it was impossible to do so without hurting him. He had been enjoying himself in a little pool on the sea-shore when Mr. Wood found him, and near this pool there happened to be some fine sea-anemones. Mr. Wood thought he would try to drive him out of his shell by frightening him a little, so he put him into the tentacles, or feelers, of a large sea-anemone; and the poor hermit, being very uncomfortable, and in a great hurry to get away, loosened his hold of the shell and was easily plucked out. He was allowed to walk about in the pool for a time, looking very miserable, trailing his tail behind him, and no doubt feeling himself very badly used.

After a while, Mr. Wood dropped another kind of shell into the pool; it was smaller than the whelk, and partly broken, so it did not make a very comfortable home. The hermit, however, preferring a broken house to none, stuck the end of his tail into it (it was not large enough for the whole tail), and walked about as before.

At last the old whelk-shell was put back into the pool, to the great delight of its late owner, who soon changed his lodging again, and made himself happy and comfortable.

Hermit crabs are very fond of fighting. If two of equal size are put into an aquarium, they fight whenever they meet, tumbling over each other, and throwing about their legs and claws with great energy. At last, the weaker one gives way; he finds it is of no use to contend with the other, and so he makes room for him whenever he comes near.

What is an aquarium?

A glass basin holding water, in which small fish, and sea-anemones, and sea-weed are kept. Those who are interested in them can thus watch them, as nearly as possible in a natural state.



AN AQUARIUM.



SPIDER AND WEB.

SPIDERS.

THE spider is a very beautiful little creature, and very clever. How can it walk on the ceiling with its head downwards? Its foot is made in a peculiar

way. On the last joint of the spider's foot there is a thick brush of very slender bristles.

Most spiders have six or eight brilliant eyes, like beads set in rows, on the top of their head, but some have no eyes at all.

Of what is the web made, and what are its uses?

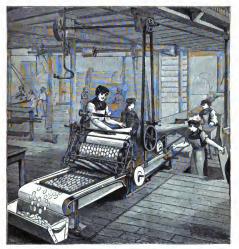
It is made of a gummy fluid which comes out of the body of the spider, and hardens immediately in the air. They attach this web to the branches of a tree or shrub, as you see in the picture, or to the corners of a room. This web is so constructed that if flies or other insects touch against it they get entangled and cannot escape, and thus become food for the spiders.

Spiders are very persevering; if their web is destroyed, they immediately set to work to make another. After having made two or three, their stock of material is exhausted, and they must either die of hunger or find an empty web. They are patient too, for sometimes they have to wait many days before they can get any food. However, they bear fasting very well. A few spiders were once shut in a box for months without food. When they came out of prison they looked thin and miserable, but a good meal or two soon made them fat again.

A spider mother is very fond of her little ones. Before they come out of their eggs, she carries them about in a little silken bag, and she will run any risk herself sooner than forsake them.

A gentleman, who was fond of observing insects, once robbed a spider of her little bag of treasures, to see what she would do. The poor mother ran about, looking for the bag, or cocoon as it is called, and seemed very miserable. When her tormentor gave it back, she seized on it with joy, and tried to get away; but the gentleman robbed her again, and then tried to deceive her by offering her bread-crumbs and little bullets of cotton, which looked like her own little bag. But she knew it too well to be deceived by these, and could not rest till her lost babies were restored to her.

When the little ones come out of the egg, their mother feeds them till they change their first skin, and then she considers they are old enough to take care of themselves.



MACHINERY FOR MAKING BISCUITS.

ABOUT BISCUITS.

You will like to hear how biscuits are made. First, however, I will tell you the meaning of the word. "Biscuit" means twice baked, because when

biscuits were made in the old-fashioned way, they used to be baked twice.

I dare say you have eaten many different kinds of biscuits, and perhaps you like the sweet cnes best; but the plain ones are the most useful, and I am going to tell you how these are made.

They are made only of flour and water, like bread, and sailors have no other bread on board ship. You may imagine how many cart-loads of biscuits are wanted for a ship that is going to take a long voyage. It was found that they could not be made fast enough by hand, and a machine has been invented for making them, which I will try to describe to you.

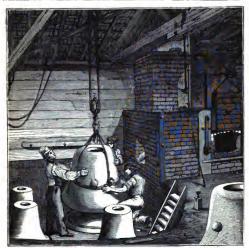
The flour and water are placed in a trough and mixed by a roller. It requires further mixing to knead it properly into dough, and for this purpose it is put under heavy rollers, which are rolled to and fro over it, till in a few minutes it is properly kneaded.

Then the sheet of dough is cut into smaller pieces, and made to pass under another set of rollers—which makes it longer and thinner—in the same way that you have seen pastry rolled out with a rolling-pin.

Then it is put in a cutting machine, as you see in the picture, and stamped, and cut into the shape of biscuits by sharp circular knives, which rise and fall every time the wheel turns round, cutting about sixty biscuits at each turn.

This done, they are discharged, or turned out of the machine, and placed in an oven to bake. The men are dressed in clean check shirts and white aprons.





TAKING THE BELL OUT OF THE MOULD.

ABOUT BELLS.

BELLS are made of a mixture of copper and tin. The place where bells are made is called a Bell-foundry. The foundry has an earthen floor, with many deep pits dug in it here and there. In these pits there are very.

very hot fires of dry fir-wood, into which the metal is thrown in order to melt it.

The tin used for bell-making is generally brought in blocks from the mines; the copper consists of old ship-sheathing and other fragments.

What is ship-sheathing?

A sheath is a case. Here is a sheath for scissors. Well, when ships are built for long voyages they are eased in copper, and this casing is called ship-sheathing. The casing requires to be renewed at the end of two or three long voyages, and the old copper is then very useful for turning into hells.

The copper and tin are thrown into the fire, or turnace as it is called, till they melt and become liquid like water. It is very pretty to see the furnace full of fiery white metal. Now that it is melted by the great heat, it is ready for casting.

What is casting metal?

Pouring it into a mould to give it the right shape. I will show you how a jelly is poured into a mould when it is liquid, that it may take the right shape when it cools and becomes solid. This will help you to understand the casting of metals. The mould, into which the metal flows to form the bell, is made at the bottom of a pit near the furnace. I can give you some idea of what it is like, by taking three basins of different sizes and turning them upside down, one over the other. When the middle one is taken away, there is a space between the other two, and the liquid metal flows into this space, and there remains till it is quite cold and solid. In the picture you see the men taking the bell out of the mould.

When it is cast it must be tuned, and this is done by chipping away the metal, either at the edge or at the part where the hammer strikes, so as to make it higher or lower in tone.

What could first put it into the minds of people to make bells?

I suppose they noticed the sound that was produced by striking pots and pans, and this made them think of it.

We read about bells in the Bible-little gold bells which the high

priest used to wear on his dress (Exodus xxviii. 34). The kings of Persia also wore them in the same manner. The old Greeks and Romans had hand-bells, but the large bells, such as those in our churches, were not invented so long ago.

How long have these larger ones been invented .

More than a thousand years.

Some enormous bells are larger than your nursery. One very large bell in England is called the Great Tom of Lincoln, and another the Great Tom of Oxford. But the Russian bells are the largest of all.

When William the Conqueror ruled over England (about 800 years ago) he ordered a bell to be rung every night at eight o'clock, when the people were to put out their fire and candles, and retire to rest.

.Why were they obliged to put them out so early?

To prevent the Saxons, over whom he ruled, holding midnight meetings to plot rebellion.

Even now, in some old towns the curfew bell is rung at eight o'clock, but the people are not obliged to put out their fire and lights now. It is only rung to keep up the old custom.

Why is it called the curfew bell?

From a French word, couvre-feu, which means "cover-fire."

William the Conqueror was a Frenchman, and came from Normandy in France. When you read the History of England, you will learn how he came over and fought a great battle at Hastings, and conquered our English king, then you will better understand why he ordered the curfew bell to be rung.





FLYING FOX.

THE FLYING FOX.

THIS is a picture of a kind of bat called the Flying Fox. You see that the head is very much like a fox's head, and the fur is red and fox-like,

Bats are curious creatures. They are not birds, yet they have two queer-looking members like wings, which enable them to fly. All bats are fond of the dark, and like to live in caves, church-towers, and other places which are not often visited by men.

The bat dislikes the ground, and its manner of walking is very awkward; it falls first on one side and then on the other, reeling and stumbling along as if it had no power of guiding itself. It has a most peculiar way of taking rest, hanging on to the bough of a tree by its hind-feet, with its head downwards. It looks very unconfortable to us, but I dare say the bat would be nearly as miserable lying in your warm bed as you would be hanging with your head downwards from the branch of a tree.

There are several kinds of bats. Those in the picture are the largest but not the fiercest kind. The vampires, or American bats, are the most savage. They often attack horses and other animals, and sometimes creep into houses in the night, and bite any unfortunate man, woman, or child who may happen to leave a foot uncovered—for, strange to say, they always attack the foot.

Our English bats are very harmless. One of the most common is the Long-eared Bat. It is a pretty little creature, and can be easily tamed.

I will tell you about a bat which was caught by a young friend of mine, a deaf and dumb boy, who is fond of observing the habits of birds and animals. He was one evening walking in the garden with his net, hoping to catch some new kind of moth, when he saw a bat flying about in the air. He caught it in his net, and put it in a large wooden cage in which he had formerly kept some white mice. The poor little bat did not like to be made prisoner, and tried to bite, but its tiny teeth could not hurt. The boy was very kind to it, and fed it on flies and raw meat chopped up very fine. He used to let it exercise itself in a large room, and at these times the bat would disappear behind curtains and in dark corners, and play hide-and-seck with the boy, who had sometimes much ado to find it again. He got very fond of his little pet, but it soon died—its new life did not seem to agree with it, and perhaps it pined after the friends it had left in some dark hole or hollow tree.

There is a country in Africa called Nubia. It is the same country which is spoken of in the Bible under the name of Ethiopia. There are a great many old tombs in it which are cut out of the rocks. They are like rooms under ground. I have read of some travellers who visited one of these tombs and found it filled with bats. The bats were clinging to the roof fast asleep, but the lights which the travellers earried in their hands disturbed them, and they soon began flying about in a state of great alarm. There were thousands and thousands of them whirling about, and by flapping their great wings they put out all the lights. It was not a very pleasant situation to be in, but fortunately our travellers were able to light their tapers again, and I should think they were glad enough to find their way out of the tomb, and enjoy the fresh air and sunshine.

Few people can envy the bats their dwelling-places.





THE MANUFACTURE OF ENGINES.

GEORGE STEPHENSON.

I HAVE told you about James Watt, who discovered how to make a steam-engine. I will now tell you about George Stephenson, who brought the steam-engine to greater perfection, and adapted it to the purpose in connection with which it has since become most popular—namely, the railway. George Stephenson was the man who first thought of railway trains, and it was he who afterwards planned them, and then made an engine that would carry them along. We have to thank him for being able to travel quickly and pleasantly, as we now do, from place to place. He was born on the 9th of June, 1781, and was one of six children supported by poor parents on twelve shillings per week.

His father and mother were poor, and lived in a colliery village near Newcastle.

What is a colliery village?

It is a village near a coal-pit, where most of the cottagers are employed in the pit. "Old Bob," as George's father was called, was fireman to the engine which pumped water from the coal-pit—that is, he had to keep up the fire by shovelling in coal. He received the pay of a common labourer. He and his wife were good, respectable, hard-working people. Robert, the father, was fond of animals, and had a store of good stories which he delighted to tell, to the great amusement of his neighbours; and Mabel, the mother, was a thoughtful, kind-hearted woman. So the family was respected by all; but I am sure Robert and his wife had no idea that a son of theirs would ever become famous. They did not even send their children to school. They had six children; George was the second child.

When George was about eight years old, the family removed to Dewley Burn, where his father had the same employment as before.

George also had some work given him at a farm near, for he was considered old enough to earn something now. His first business was to take care of a few cows, for which he was paid twopence a day. Then he was set to do other kinds of farm work, and his twopence rose to fourpence. But this sort of life did not suit his taste. He liked mechanics—that is, he enjoyed watching machines at work, and trying to understand how they were made. Then his great delight was to imitate them, and he amused himself by making water-mills with reeds and straw.

He was glad to leave the farm, and to get work at the colliery, where he could watch the engine at work. He was made assistant fireman to his father, and for this he received a shilling a day. He was now fourteen years old.

The coal-pit at Dewley Burn was soon worked out, and then the family removed again to another colliery, a few miles distant. George was so steady and industrious with his work, so good-natured and clever, that he became a great favourite. He was made engineman, or plugman, and instead of looking after the furnace, his duty was to keep the engine in good working



YOUTH AND OLD AGE OF GEORGE STEPHENSON.

order; and this he thoroughly enjoyed. He was so fond of his engine that it was his greatest delight to take it to pieces and clean it, and put it together again. Then when it was at work, so long as the pumps were all right, there was little or nothing to do. The engine worked away of itself, and George employed his spare time in making little steam engines of clay. While doing this he was told of some engines different to those which he had seen. They were far away from his home, so he could not examine them, but he longed to read the description of them in books. Alas! he had never been taught to read; he did not know a single letter. However, he thought it was never too late to learn, so he determined to make up for lost time and begin at once. He found a teacher named Robin Cowens, who agreed to give him lessons in the evening for threepence a week. Afterwards he went to an evening school at Newburn, where he was taught to read and write. The master gave him questions in arithmetic, and he used to work out his sums while attending to the engine. One of George Stephenson's maxims was to lose no time; he made a good use of every moment. It was his great pleasure to learn, and he did not care what pains or trouble he took to conquer a difficulty.

He learnt to mend and make shoes, and by this means managed to save a guinea, which he put by for housekeeping. It would not go very far, but still it was a beginning, and in a few years he was able to furnish a cottage and marry Fanny Henderson. They had a little son called Robert, who grew up to be as clever a man as his father. But I am sorry to say poor George lost his wife when he had been married two years. This was a sad trouble to him.

A few years after his wife's death he went into Scotland, to see about an engine there. The place he went to is called Montrose; it is a hundred and fifty miles from the village where George lived. How do you think he travelled there? There were no railways then, and travelling by coach was very expensive. George was a poor man, and could not afford to spend money in coach-hire, so he walked the whole distance. After remaining there some time, and saving a little money, he walked all the way home again. It is poor father and mother were very glad to see him; they were getting old

and infirm, and could not work as they used to do. George put them into a comfortable little cottage, and made them happy in their old age. If he had not denied himself many comforts he would not have been able to do this. He worked hard, too, to give his son a good education; after his day's work at the coal-pit was done, he used to mend his neighbours' clocks and watches, so as to earn money to pay for Robert's schooling. Knowing how much the want of learning had stood in his own way, he determined that his boy should not have the same hindrance. I could tell you a great deal more about him and his son Robert: how they used to study together, and work at engineering together; and how Robert delighted in helping his good father as much as possible. But when you are older I hope you will read an interesting life of George Stephenson, written by Mr. Smiles. For the present you must be content with knowing that he became more and more clever in engineering; he made great improvements in the steam engine, and people trusted and looked up to him. However, when he first proposed to build a railway, everybody laughed at the idea, and said it was quite impossible to make one, there were too many difficulties in the way. But, as I told you before, George Stephenson was not afraid of difficulties; he enjoyed the pleasure of overcoming them.

After a great deal of trouble he got permission to build the first railway between Liverpool and Manchester, or, rather, to superintend the building of it. All his perseverance, and all his powers of invention, were required to carry out his design. His workmen had to cut through hills and raise embankments, but the greatest difficulty of all was to turn four miles of a watery bog, called Chat Moss, into a hard road.

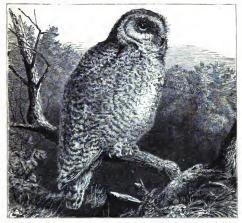
It was all done, however, and the first railway was opened on the 15th September, 1830. That must have been a happy day for George Stephenson. Step by step, he had worked on patiently and steadily, till the grand idea of his life was accomplished.

Before he died he became a very rich man, and was often invited to the houses of grand people, but he rather disliked what he called "fine company," and preferred keeping to his own simple way of life. He took great delight in his garden, and was very fond of birds and other animals. He died at the age of sixty-seven.

I am sure we ought always to think gratefully and with deep respect of the collier boy, who used his talents so well, and spent his life so usefully. He has left us a better thing than railways—the example of a noble life.



HOUSE IN WHICH GEORGE STEPHENSON WAS BORN,



THE OWL.

THE OWL.

OWLS are very useful birds, for they destroy rats, mice, frogs, toads, and insects, which would otherwise become very numerous and troublesome. Owls live in clefts of rocks, hollow trees, ruined houses, or old church-towers. They sleep in the day and fly abroad at night, in search of food. Their eyes are so formed that they cannot bear the light of day, but see perfectly well in the twilight.

There are many different kinds of owls. Some have horns of feathers on each side of their heads, and are called Horned Owls. The Common Great Owl is the largest and strongest of all, and is very brave; it will sometimes venture even to fight with an eagle. Its home is among the high mountains of Switzerland and Italy.

But you will like to hear about owls which are common in England.

The Barn Owls are English, and they have no horns. One branch of this family is the Tawny Owl. It lives in the woods in summer, and hides itself in the thick bushes or the trunks of trees. The boy of whom I have spoken before, who kept the bat in a wooden cage, once bought a tawny owl when it was very young. Although this boy is deaf and dumb, he has been taught the use of words, and can talk with his fingers and in writing. He has sent me the following description of his owl, which amused me very much, and I think it will amuse you:—

"The owl's favourite abode was a dark loft with a small window in the roof, and large perches were provided for it. Its chief food was bullock's liver just killed, and living mice and birds, of which it was particularly fond. When food was served for it in the day-time, it generally waited until the approach of night, as is the custom of nocturnal birds of prey. Its mode of eating mice was very singular. When I gave it a fresh dead mouse, the owl came down to the low perch from its high sleeping perch, and snatched the mouse from my hand, and swallowed it with perfect ease, without having cut it to pieces. But its mode of eating birds was quite different. One Sunday morning I took a dead lapwing with its feathers on, and hid it in a part of the loft, intending to watch my owl eat it after I had returned home from church. But the owl's eyes are very wonderfully developed, as the naturalists say; it can see to a great distance, and can hear the least noise. After returning home I went to the loft, and intended to let the bird feed on the sweet flesh of the lapwing, but to my great surprise I found the lapwing was gone, and on turning my eyes to the ground I saw the feathers were scattered about, and no bit of the flesh was left. My owl had been tearing the feathers out, and had eaten all the body. The owl's temper was more fierce.

than I had expected, as is the case with birds of prey; it scratched the upper part of my hand by its sharp talons when it became irritable. When I went to school I left the charge of it to my brother, and I received from him tidings concerning its movements. It tore the straw out of the hole under the roof, and went away to the tower of the neighbouring church. On the following Sunday the men rang the bells in the tower of the church. and the owl became excited and frightened, and flew off to a considerable distance, its wings moving slowly and silently. Next day it was observed by my brother sitting on the branch of a high elm-tree. He therefore mounted a ladder, and found it so exhausted from the want of food for seven days, that it allowed itself to be taken by him. The owl appeared much thinner from its long fast. My brother gave it about fifty heads of herrings to satisfy its hunger. It ate them with great rapidity. The tree on which it perched was so near its abode that we supposed it wanted to go home, but could find no hole to let itself in. I once took a living bantam cock into the loft, to see if it would pounce upon it. The owl was asleep. The cock saw its dangerous enemy, and crowed so excitably that the owl was awakened, and came down, glad to find its favourite food. It stretched out its wings in a moment to pounce upon the alarmed cock, but I defended the cock from the attack of the savage bird, and set it free. My owl lived eleven months in the loft, and then showed signs of sickening, and expired. This wise-looking bird, as the people call it, was stuffed, and is now preserved under a glass case."





FLYING FISH.

THE FLYING FISH.

HERE is a picture of a shoal of flying fish. The flying fish can both swim and fly. When pursued by a porpoise it raises itself into the air to escape from its enemy; but, alas! gulls and other sea-fowl are always on the watch for it; so it has no peace either in the air or water. The large sea-gull, in the picture, with open mouth, evidently means to breakfast off one. But the flying fish is very clever in getting away from its enemies, and passes from one element to the other with wonderful quickness and energy.

It can leap from the sea to the height of five or six feet (that is, about the height of a man), and then keep itself up by the help of its great fins, and move on for several seconds.

There are different kinds of flying fish. Some live in the Mediterranean, and others in the Indian Sea. The former is called the Flying Gurnard. It is a little more than a foot long; the upper part of its body is brown, the sides red, and the under part a pale rose-colour.

Perhaps you would like to hear a little about the porpoise.

It is not, properly speaking, a fish, though it lives in the water. It is from about six to eight feet long, of a bluish black colour on the upper surface of its body, and silvery white below. The effect of the black and white, appearing by turns, when it is tumbling about in the sea, is very strange and pretty. Porpoises are often to be seen on our own coasts, and in the days before steam-boats were used, they would often follow the passenger boats, but now the noisy paddles frighten them away.

They are enemies to the fisherman, because they eat so many fish which would otherwise come to his net. Herrings, sprats, and even salmon, are devoured by them.

The skin of the porpoise is made into valuable leather.



THE DUCK.

HERE is a picture of some tame ducks. There is the father, the drake, in front, looking very proud of his family; the mother is swimming towards him, and the little ones are playing in the background. One of the ducklings is diving, and you can only see his tail above water. I dare say you.

have often seen ducks in a pond, and ducks on land. Which do you admire most? They do not look at all elegant waddling about on the land, but in the water they are very pretty and graceful.



WILD DUCKS.

Wild ducks are much stronger, and can fly better than tame ones. Here you see three flying across a river.

The ducklings are led to the water very soon after they break their shell, and they do not return to the nest. At night their mother covers them with her wings, and feeds them with small flies.

An American gentleman tells a pretty true story of a wild duck which he found in the woods with her young family, one day when he was out with his gun. As he came near, she hissed at him, and looked very angry; the ducklings ran off in all directions. The gentleman's dog, which had been well trained, brought the little creatures to him, one by one, without hurting them at all. When they were all in the game-bag, the poor mother, in a state of misery and despair, came and laid herself at the sportsman's feet, as if begging him to give back his treasures. He was so touched with pity at the sign of her distress that he did restore the little ones, and he fancied there was a grateful expression in the duck's eyes as she looked up to thank him.

I do not wonder at this, for I am sure that ducks and geese are capable of gratitude. I cannot refrain from telling you here another true story of a grateful gander. A gentleman had two ganders who were often striving for the mastery; one of them was grey, the other white. The grey gander was the stronger of the two; but the white gander is the hero of my tale. His name was Jacquot. One day, when he was struggling with his enemy, and was nearly overcome by him, the gentleman, hearing the noise, went to the bottom of his garden and saved poor Jacquot from untimely death. This grateful gander never forgot his master's kindness, and used to follow him about, from place to place, like a dog. Once, when the gentleman was at the house of a friend, Jacquot passed under the window and heard his voice. The door being open, Mr. Jacquot entered without ceremony, flew or floundered up the stairs, and came into the room where the family were sitting, saluting his master with cries of joy.



THE EIDER DUCK.

THERE is a bird very common in Norway, and still more common on the rocky islands in the far North, called the Eider Duck. The female bird plucks the down from her own breast to line her nest; and this down is so



valuable for quilts and petticoats, on account of its lightness and warmth, that the birds are often robbed of the down from their nests by the islanders. It is a piteous sight to see the poor bird with her breast almost bare, and the nest which she had taken so much pains to prepare for her little ones comfortless and spoiled. It is said that the drake will give some of his own down to line the nest when the duck has no more left. The drake is a very handsome bird, nearly double the size of an ordinary farm-yard duck, and he seems to make a very good, kind husband. The duck is smaller than her mate, and is of a sombre brown colour.

A gentleman named Mr. Shepherd once paid a visit to an eider duck island off the western coast of Ireland. It was only three-quarters of a mile in width, and was 'almost entirely surrounded by a stone wall, about three feet high. Every alternate stone at the bottom of the wall had been taken out, leaving a hole for the duck to build her nest in. The island belonged to a widow, who gave up all her time to the care of these ducks; the walls and roof of her house were all covered with ducks, and there was even "a duck sitting in the scraper."

I have read an amusing and true story of a battle between an eider drake and a raven. It came about in this way: The drake was watching, like a good husband, while his mate was sitting on her nest, to protect her from intruders. A sly raven, looking out for eggs, attacked her, laying hold of her tail with his beak, and trying to pull her backwards. Mr. Drake, seeing the assault on his wife, hastened to the rescue, and darted on the raven before he was aware of his danger. He took a firm grip of the raven's neck with his strong beak; the raven at once let go the duck's tail, but, do what he would, he could not get his neck out of the drake's beak. He was being choked, and could do nothing but flap his strong wings and utter hoarse cries. One side of the rock on which the struggle took place sloped down to the sea, and the drake tried to drag his enemy in this direction. After much difficulty he got him to the edge of the rock, and they rolled down together into the sea. Presently the drake came up victorious, but the wretched raven was never seen again. I think he deserved his fate for trying to rob the poor eider duck of her eggs.



ARABIAN CAMELS.

THE CAMEL AND THE DESERT.

THIS is a picture of a desert. It is like a great sea of sand. There are no houses, no trees, no flowers, no hills; nothing to be seen but sand for miles and miles. Who can cross such a sandy waste? There is an animal which is sometimes called the Ship of the Desert, because it carries men across that

ocean of sand. This animal is the camel. Its foot is exactly suited for walking on a loose soil, as its broad toes are furnished with soft wide cushions, which enable it to maintain a firm hold on the shifting sands. Another peculiarity of the camel is that it can live for many days without drinking, as it has a kind of bag in its stomach which forms a capital storehouse of water. It is said that sometimes, when the men have been nearly dying from thirst, the poor camels have been killed for the sake of this water. The camel can also bear hunger better than most animals, and is satisfied with the meanest food.

There are two kinds of camels; the Arabian camel has one hump, the Bactrian camel has two. The one-humped camel, sometimes called the dromedary, is the more valuable. After long journeying and great hunger the hump becomes small, and nearly disappears; and it only grows again by great care and good feeding.

What is the colour of a camel?

Some are light brown, some almost white, and some nearly black.

The camel's milk, mixed with meal, is very much liked by the Arab children. The camel is useful even after its death, for its long hair is spun into a coarse thread, and made into broad-cloths and similar articles.

Is the camel good and gentle?

It is very patient, and many people have praised its gentleness; but the poor camel has been so cruelly ill-used by men that it scarcely knows its friends from its foes; and while it submits to very bad treatment from its master, it will sometimes bite the kind hand that would pat it, or offer it food. But slaves are never amiable. How can they be, when they have known nothing but harshness and injustice?

The camel is able to carry a heavy load on its back, much more than can a horse. As it is very tall, it kneels, as you see in the picture, whilst it is being loaded. It is a very sensible animal, for if a greater burden is put on its back than it feels capable of carrying, it refuses to rise until a portion of it has been taken off.

Why do people want to cross the desert?

Merchants cross it to take their stores from one country to another, and Arabs too often cross it to rob the caravan.

What is a caravan?

It is a name given to the company of merchants and travellers who join together in crossing the desert, that they may protect each other against the robbers. Every caravan is under a chief, who has under him generally a sufficient number of troops to defend it. The desert sometimes looks very beautiful when the full moon is shining in the dark blue sky, and the stars are shining too—stars which look much more brilliant than those we see in England. Fancy that you see the tents, and the watch-fires, and the camels lying down to rest, and as far as your eye can reach nothing else but yellow sand, with here and there a dark shadow thrown on it by the distant mountains. It looks very grand and very desolate.

There is a burning wind called the simoom, which sometimes visits the desert, and this is one of its chief dangers. It blows the burning hot sand into the eyes and mouths of the travellers, so that they are nearly smothered by it. To save their lives the men throw themselves on the ground, and cover their faces, or they would be choked by the sand. Even then they are not safe, for such immense quantities of sand are whirled along by the wind, that drifts, higher than our houses, are instantaneously formed, burying the poor travellers, so that they die in the desert.





DRAGON-TREE OF TENERIFFE.

MORE ABOUT TREES.

THIS is a picture of a dragon-tree which grew in Teneriffe, one of the Canary Islands. It was supposed to be the oldest tree in the world. It was blown down some time ago.

This tree, from its great age and immense size, was an object of much

interest to every one who visited the island, and I believe the ignorant natives worshipped it. Its trunk was so thick that ten men holding hands could hardly encircle it.

The trees in very hot countries grow to an enormous height, and are extremely beautiful. There is great variety among them too, which adds much to their beauty. See the different shapes and sizes of the trees in the picture. The flowers of these trees are of a most gorgeous crimson colour; you may see them in English greenhouses, and notice how peculiarly they grow, unlike our English flowers. Many of the West Indian fruits also are brought over to England, and sold in the markets. I dare say you have seen the pine-apple.

There is a curious kind of pear which grows in the Antilles or West India Islands, called the Avocado pear. It is the same shape as ours, but about six times as large. It has a leathery, hard outer skin, and a large stone or kernel about the size of a cricket-ball. The eatable part is between the skin and the kernel. It tastes like marrow, and is spread on bread, and eaten with salt and pepper. The tree on which this fruit grows is not a large one; it is about the size of our apple-tree.

Orange-trees are so common in Jamaica that they grow by the road-side; must they not be very refreshing to the people in that hot climate? Every country has its favourite tree. The oak is the king of our forests. We used to make our ships of oak—the wooden walls of Old England, as they were called.

The Hindoo has his banyan, of which I have already told you. The bamboo is the favourite tree of the Chinese. They make entire houses of it, and have bamboo chairs, benches, mattresses, pillows, and mats. It is called the tree of all-work. Pens, paper, musical instruments, pipes, baskets, and hats are also made of it. The rapid growth of this tree is very remarkable. In the space of a day and a night it grows about two feet.



THE COMMON FROG.

FROGS AND TOADS.

THERE are two kinds of frogs in Europe—the green, or eatable frog, and the common frog. You have often seen the common frog; it is smaller than the other kind.

The green frog is very nice to eat; it tastes like chicken, and is eaten in some parts of France. Frogs are very interesting little creatures. In many respects they are like fishes, and, indeed, in their childhood they are fishes in form as well as habit. The changes which they undergo are most curious and wonderful, and it would interest you very much to watch a frog through all its different states of life. The first thing which comes out of the egg is the tadpole, a curious little being without legs. Its body is oval, and ends in a long flat tail, and on each side of its neck are two large gills. These gills soon wither, and then two hind-legs appear. Soon after this, the fore-feet begin to show themselves; and when the legs have appeared, the tail little by little withers away, till the creature becomes a perfect frog.

Tadpoles live only in the water, but when they become frogs they are obliged sometimes to come to the surface to breathe, and spend part of their time on land. In winter they take up their abode in the mud at the bottom of ponds. The frog has a curious tongue, which points backward down the throat when it is not in use; but if a slug ventures near, the tongue is soon thrust out, and carries the poor slug quickly down the frog's throat.

Toads are less pretty than frogs, and their movements are slow and awkward. They do not like company, but prefer to live alone; yet they may be tamed.

I am sure you will like to hear about a tame toad. I can tell you of one which lived under the staircase of a house. It used to come into the dining-room every evening, and allowed itself to be placed on a table, where it was fed with worms and various insects. Every one was kind to it, and it lived very happily in the same house for thirty-six years. At the end of that time a crow, that was tamed and kept in the same house, attacked the poor toad and put out one of its eyes. It did not live long after this.

THE END.

I KNOW that these "Scraps of Knowledge" about men, countries, trees, and manufactures will only make you long to know more, and to read for yourself about them. Such has been my intention in writing this book; and in a few years you will be able to learn much more than you could understand at present. But first you must learn to read well for yourself.

I hope the little you have learnt from this picture-book will make you open your eyes when you go out into the country, to notice more about the animals and plants than you have ever noticed before. And I am sure you will open your ears when you catch the name of any place or person that is spoken of in your own book.

Perhaps some day you will make fresh discoveries for yourself in the great book which is written for children as well as for grown people, for the untaught Indians as well as for the educated Europeans, and which we can never read through, if we go on reading all our lives, but may always find something new and interesting in every page.

Do you wonder what book this is? It is called the Book of Nature. It is not a printed book. It is nearly closed to children who live in towns, but it is open to those who are in the country, and all wise children and grown people love to read it.

It is God's own book, like the Bible, and he made it for our learning. It shows us how good and wise he is, fitting every creature he has made for its proper work, giving to the Laplander a strong body so that he can bear the cold, and to the negro a black skin to protect him from the sun; giving to each animal a form which makes it happy in the element in which it lives; giving to us in England many, many good gifts, for which we can never be sufficiently thankful, and for which even little children ought continually to love and praise him.

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